MARCH 2, 1959

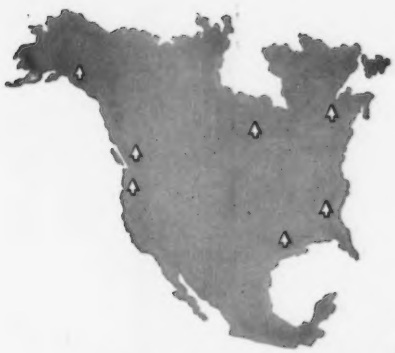
PAPER TRADE JOURNAL

Superintendents' Panel Emphasizes Trouble-Free Felt Operation

Organization of Downingtown's Industrial Engineering Dep't

Do Computers Have Practical Application in Our Industry?

Dobrow Forecasts New High for Paper Industry in '59



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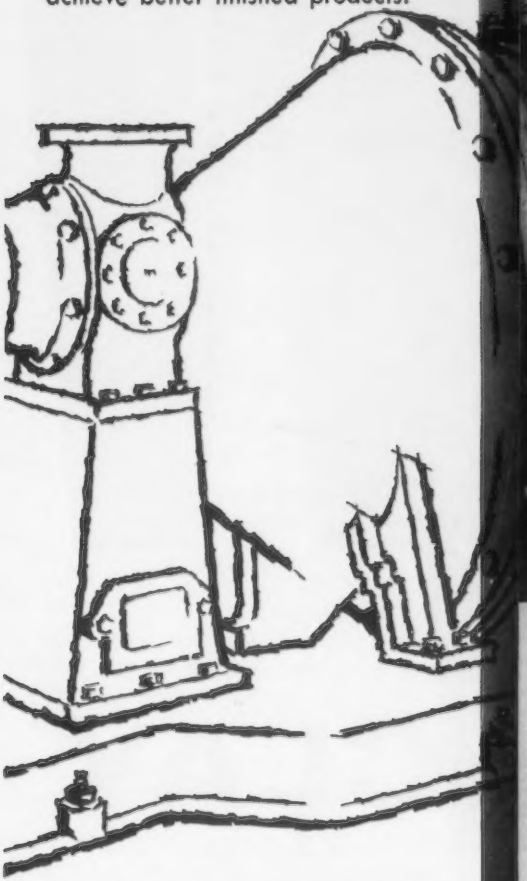

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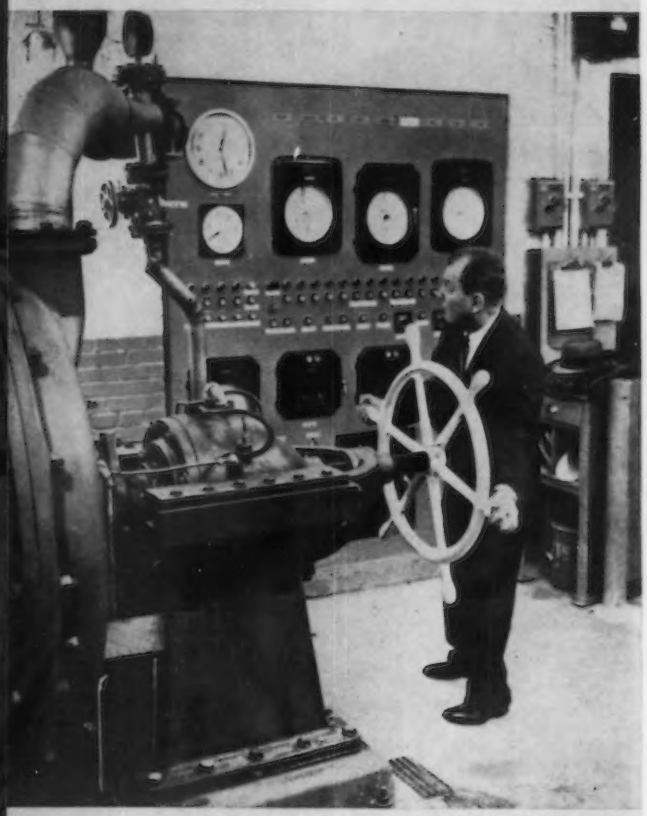

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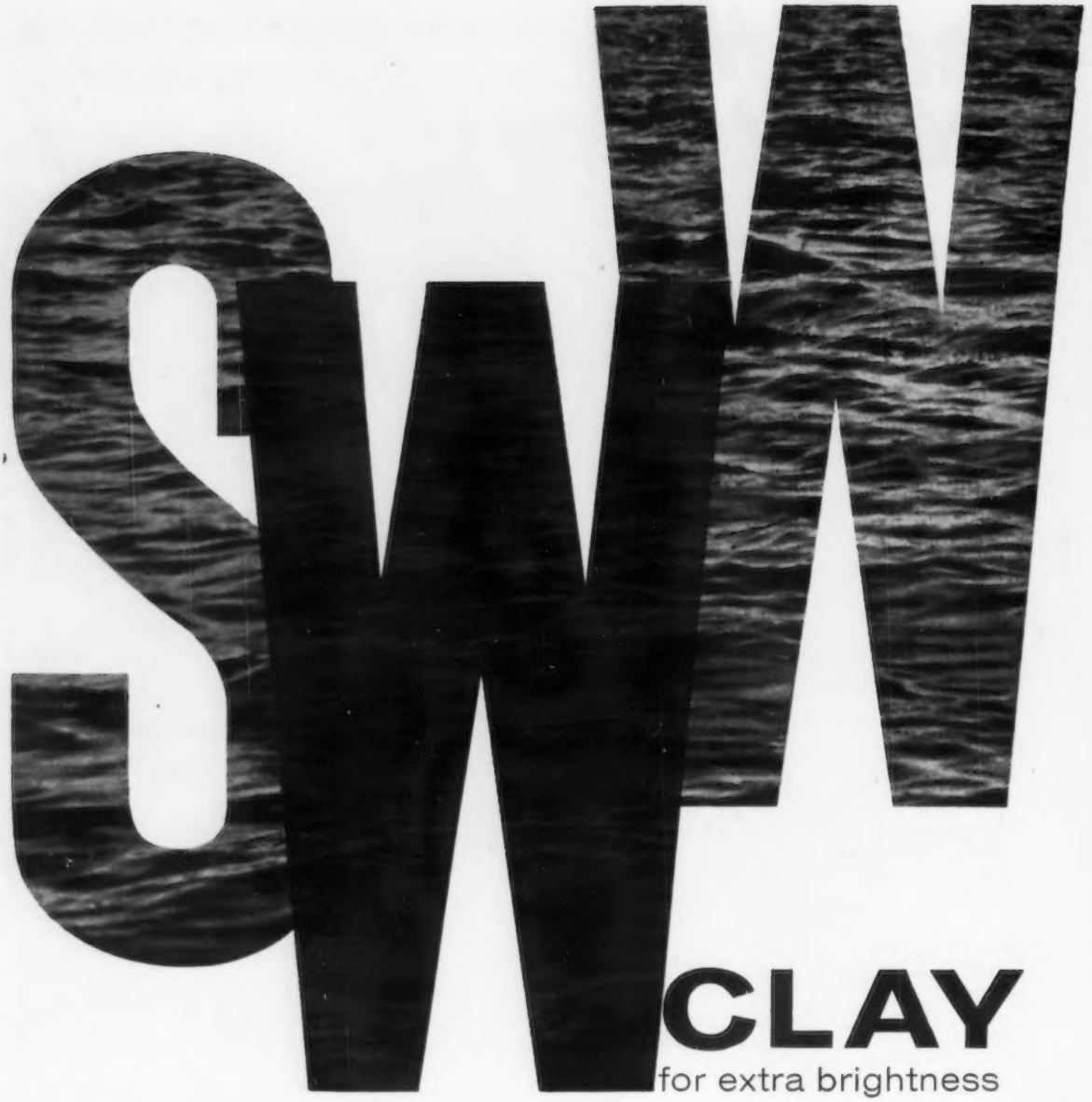

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REMEMBER THESE DATES

March 8-11, National Paper Trade Ass'n., Annual Meeting, Waldorf-Astoria Hotel, N. Y.

June 2-4, American Pulp and Paper Mill Superintendent's Ass'n., National Meeting at the Shamrock Hilton Hotel, Houston, Texas.

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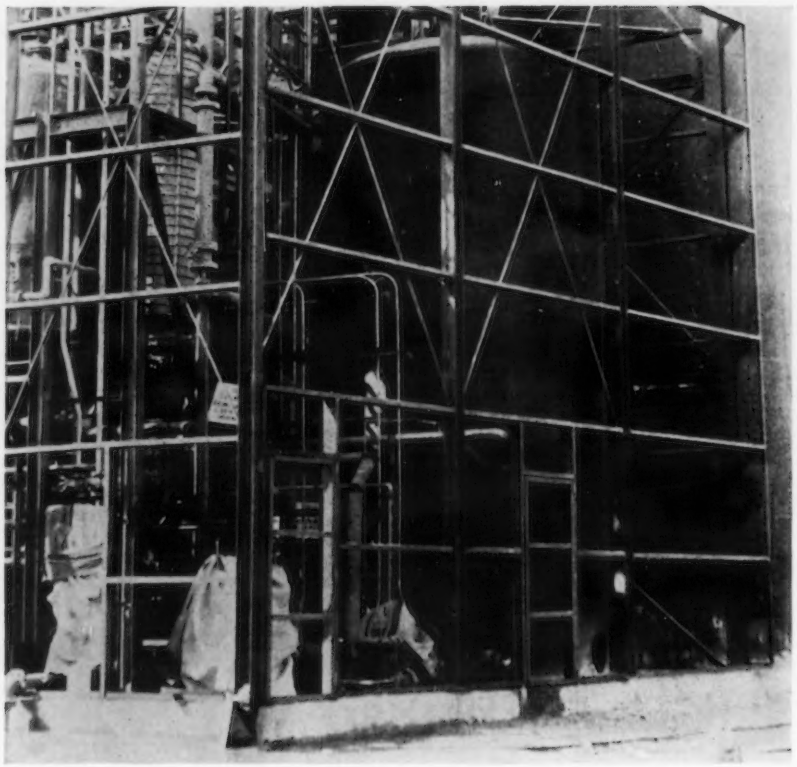

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Trends

Paper Executives' Common Denominator

Restrained optimism for the immediate future—Growing concern about inflation—Recognition of the need for aggressive merchandising of our products—Expanding research expenditures in the search for new products and improved production methods. These were the common denominator in the minds of the pulp and paper company executives gathered in New York for the American Paper and Pulp Ass'n. annual meeting.

Bright Outlook for Exports to Europe

Indications are that the new European economic federation will be more open than divided Europe, with increased demand for paper products, predicted C. N. Auer, president U. S. Paper Exporters Council, to the APPA Export Committee meeting. It will offer American producers an opportunity to supply that demand or demands of other markets vacated by Scandinavian producers in favor of the European one.

Machinery Cost Rise to Continue

Cost of capital equipment for pulp and paper mills will, considering the inflationary rise, increase at an average rate of about 4.7% per year, stated Carl C. Landegger at the APPA Materials Committee meeting during Paper Week. This is an annual rate of increase only slightly higher than has been occuring in recent years.

Business Forms Industry Grows

Sales of business forms in 1958 are estimated at $350,000,000, which equal those of 1957, a record year for dollar volume according to the Business Forms Institute. Dollar volume of forms sold in the past two years exceeded 1956 by $42,000,000, with every indication that 1959 will exceed the 1957 and 1958 totals, although the increase is expected to be steady rather than spectacular.

Kraft Paper Outlook Good

Shipments of kraft paper should rise to record levels this year, totalling about 2.8 million tons, P. W. Hoguet, president, Econometric Institute, told the Kraft Paper Ass'n. meeting. He forecast a 3% increase in demand and a 7% rise in production for 1959 over 1958.

Inflation is Not Inevitable

The following points on business and inflation were made by Raymond Rodgers, Professor of Banking, New York University, at the Sulphite Paper Manufacturers Ass'n. annual meeting. 1. Business will be good in the months ahead. 2. Inflation continues to be our number one economic problem. 3. There are many anti-inflationary forces which will keep inflation within bounds if these forces are permitted to operate.

Russian Pulp

An upsurge in the efforts of a United States importer to sell Russian bleached sulphite pulp is discussed on the first news page. The conclusion that this is not a subject for hysteria is backed by discussions with the many pulp experts available in New York during Paper Week.

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PAPER TRADE JOURNAL

WEEK OF MARCH 2, 1959

Hawthorne Buys Florida Paper Mill

Hawthorne Paper Co., Kalamazoo, Mich., announces that one of its wholly owned subsidiaries has purchased all of the paper mill properties in Hollywood, Fla., which were formerly owned by Pan American Paper Mills.

The property, located on the Seaboard Railroad, consists of modern buildings approximately three years old, a 74 inch fourdrinier machine and beater room and finishing equipment. The present paper machine and stock preparation equipment will be converted to the manufacture of offset and writing papers, as well as 25 per cent and 50 per cent rag content papers.

Options have been obtained on two additional paper machines, one 142 inch and one 164 inch. One of these will be added to this mill at once to make book and offset grades. New stock preparation equipment will be installed promptly, along with the necessary finishing equipment. A modern de-inking plant is to be built and equipped within the next 18 months.

Fraser Paper Expanding at Madawaska

A major paper mill expansion program has been announced by Fraser Companies for their mill at Madawaska, Maine. The program will commence this spring with construction of a new paper mill building of sufficient size to house two large fourdrinier machines. The first of these, a 236 inch wide machine was ordered this week from Pusey & Jones, to be delivered in time for start-up in 1960. The balance of the space in the new building will be reserved for the later installation of a second paper machine. Products to be made by the new machine will include Fraser's wide range of sulphite specialties and groundwood printing and catalog and directory papers. This spring the facilities for finishing, storage and shipping of paper at Madawaska will be enlarged.

Fraser is also planning to expand their paperboard production at Edmundston, N. B. Active investigations are now underway to determine the best method to achieve this expansion.

Powell River Co's. New Paper Mill

Construction of the fine paper plant of the Powell River Co. will commence this summer on Annasis Island, near New Westminster, B.C. The project was announced several months ago, but details have only now been released by M. J. Foley, president. The company also has plans actively under way for a flake board plant near the company's sawmill facilities at New Westminster.

The new fine paper mill will employ about 70; have capacity of 14,000 tons a year and is scheduled for completion in about May, 1960.

The mill will be two stories and 420 by 50 feet. The finishing and warehouse building will be one story and 200 by 140 feet.

Onion skin, bond, ledger and writing paper will be manufactured, and the market is expected to be B. C. and the prairies, although some export is hoped for.

Russian Pulp Scare

Efforts of Orbit Sales Co. of New Haven, Conn. to sell Russian Pulp in this country have recently received nationwide publicity. This Orbit operation was reported in Paper Trade JOURNAL about a year ago.

Orbit are reported to be dealer opportunists who have been selling anything they can make a profit on, chiefly housewares. The company has announced that it hopes to sell 20,000 tons of pulp in this country during 1959. For the first 11 months of last year sales of Russian pulp here were only 214 tons.

There seems to be no justification for hysteria about Russia flooding the U. S. pulp market. In the first place the U.S.S.R. is basically an importer of pulp since she does not produce enough for her own needs. The figure of 20,000 tons is a relatively small one. Since it represents only about one quarter of the output of a moderate size market pulp mill or to state in another way, if that quantity of Russian pulp *were* used in this country in 1959 it would represent considerably less than one per cent of the market pulp consumed here. Although Russia has underway a considerable pulp mill expansion, it is reliably indicated that the majority of this is needed for home consumption.

Conflicting prices have been published for this Russian pulp but these appear to be incorrect. However it is known that Orbit is offering the pulp at prices sufficiently below the general market level to attract interest.

Strawboard Mill for Red Deer

Construction is expected to start soon on a board mill at Red Deer, Alberta, to be built for Mid City Paper Ltd. Plans call for the mill to use wheat straw as a fiber source.

Boxboard will be the main product. From this, shipping boxes, wrapping materials, fillers and separators, box car liners and building materials can be produced.

Arthur M. Shoultz is president of the company and Dorothea Adamson, secretary.

Benjamin Slatin

Slatin Appointed APPA Economist

Benjamin Slatin, vice-president of The Econometric Institute, has been appointed economist of the American Paper and Pulp Ass'n. Mr. Slatin, who will assume his duties as economist on March 2, 1959 will also serve as secretary of the APPA's Statistical Committee. He replaces John Vogel, who resigned on December 31, 1958 to become marketing research manager of the Oxford Paper Co.

Mr. Slatin, who joined The Econometric Institute in 1946, was director of its Industry Division from 1954 on. Throughout his association with the Institute, he worked on the paper industry economics. He was responsible for Institute forecasts on paper and allied products and did intensive work on the durable goods industries.

He conducted many studies on all phases of the paper industry. These led to both long-range and short-range forecasts of paper requirements.

Paper and Board Production

According to the American Paper and Pulp Assn., the ratio of the United States production to mill capacity for the week ending February 14, 1959, was 87.4 per cent compared with 89.8 per cent revised for the preceding week. The ratio was 89.1 per cent for the corresponding week a year ago.

The paperboard production ratio for the week ending February 14, 1959, was 94 per cent compared with 93 per cent for the preceding week and 86 per cent for the corresponding week a year ago.

(Detailed statistics on page 50)

January, 1959 Newsprint Statistics

Production of newsprint in North America during January, 1959 amounted to 656,814 tons and was 0.2 per cent above the January, 1958 volume. Shipments totaled 621,013 tons in January, 1959 and were 2.0 per cent under shipments in the corresponding month of 1958. According to the Newsprint Service Bureau, output in the United States was 165,676 tons and shipments were 155,073 tons, and respective changes from January, 1958 amounted to a 5.5 per cent gain and a 2.3 per cent loss. Canadian production amounted to 491,138 tons and shipments totaled 465,940 tons, which represents decreases from January, 1958 of 1.4 per cent and 1.9 per cent respectively.

Production of newsprint paper in North America in 1958 amounted to 7,853,349 tons, which was 369,049 tons or 4.5 per cent below the historical high attained in 1957. United States mills produced 1,757,796 tons or 68,101 tons and 3.7 per cent below the all-time high reached in 1957. Output in Canada amounted to 6,095,553 tons and was 300,948 tons or 4.7 per cent under the volume produced in 1957.

Celgar Mill Progressing

Process engineering for the bleached kraft pulp mill of Celgar Ltd. near Castlegar, B. C. has been completed and detailed engineering is now in progress. Construction work will begin again in March. Because of design changes affecting the location of basic facilities, including the woodroom, pile driving scheduled for last November was postponed.

Celgar's plans include a 500-ton pulp mill and an adjacent sawmill at an estimated total cost of $50 million.

Starting in May work will begin on the foundations for all the pulp mill buildings, followed in June by the installation of underground services, a two-bay addition to the existing pulp warehouse, erection of the chip silos, and structural work on the woodroom, the re-causticizing plant, the waste liquor and chemical recovery, the power boiler, the precipitator, pulping and the machine room building, etc.

Clearing of a 15-acre sawmill site to the west, adjacent to the pulp mill site will also begin in May. Location of the sawmill near the pulp mill will allow for common use of services.

ALL A'SEA IN A PAPER BOAT! This all paper boat's hull and rudder are made of an entirely new kind of moisture resistant corrugated board. Hinde & Dauch Division of West Virginia Pulp and Paper Co., developer of the product, demonstrates that its new moisture resistant corrugated board will provide packagers and shippers of fresh fruits, produce and other wet packed products with a lighter weight, more attractive and stronger corrugated box than was ever before possible.

Research Dept Promotions

University where he earned his

PAPER PEOPLE

Dr. William Hoge

F. L. Grayson

Oxford New Technical Specialties Dept.

The promotion of Dr. William Hoge to director of technical specialties development for Oxford Paper Co. is announced. As head of this important new department in Oxford, he will report to Harold M. Annis, vice-president, research and development. Dr. Hoge, a graduate of Ohio State University and The Institute of Paper Chemistry, has previously been a member of the Oxford research organization. He was appointed fundamental research group leader in 1953 and technical specialties group leader in 1955.

Harold Buck has been promoted to group leader for technical specialties product engineering, under Dr. Hoge. Mr. Buck, a graduate of the University of Maine in Engineering Physics, was formerly assistant technical specialties group leader. He has been a member of the Oxford research and development staff since 1952.

Dr. Victor Mattson, a graduate of Union College and The Institute of Paper Chemistry, has been promoted to group leader for technical specialties research. Prior to his assignment to the new department, Dr. Mattson was fundamental research group leader, having joined Oxford's research organization in 1956, and was formerly with the Mead Corp. at Chillicothe, Ohio.

The formation of a separate Technical Specialties Development Department in the Oxford organization is in line with its expanded and intensified work in the development of specialty products.

More Assignments for Grayson at APPA

Frederic L. Grayson, associate economist at APPA, has been assigned additional duties. He will in the future represent the association on its Coordination of Research Committee and also will serve as secretary of the Controllers Committee. These are positions left vacant by the resignation of John H. Vogel. Mr. Grayson will continue to serve as associate economist and secretary of the Committee on Power and Water Resources. A further assignment recently given Mr. Grayson is that of secretary of the Forest Industries Council, a position previously held by Harry Mosebrook of the American Pulpwood Ass'n.

Oxford Appointments

The following new appointments were announced by T. E. Bruning, vice president and treasurer of Oxford Paper Co.

Richard F. Cadwallader, formerly assistant treasurer, has been appointed controller. Mr. Cadwallader joined Oxford in 1951. He is a graduate of Harvard University and the Harvard Graduate School of Business Administration. Prior to joining Oxford Paper Co. he was associated with Alco-Gravure Division of Publication Corp.

Marshall A. Metzger, formerly auditor, has been appointed assistant treasurer. Mr. Metzger joined Oxford Paper Co. in 1941. Before joining Oxford, he was associated with the public accounting firm of R. G. Rankin & Co.

Two Engineers Join Consolidated Water P & P

Two personnel appointments in the Engineering Department of Consolidated Water Power & Paper Co. were announced by M. V. Moisberry, chief engineer.

Richard Stoughton has joined the Instrumentation, Steam, and Combustion Section of the department as an instrumentation engineer. Mr. Stoughton, who was graduated from Tri-State College, Angola, Indiana with a B.S. degree in mechanical engineering, has been employed by the Bailey Meter Co.

Charles P. Thomas joined the department as a Mechanical Engineer. Mr. Thomas was graduated from the University of Wisconsin with a B.S. degree in mechanical engineering last month. He is a native of Watertown, Wis.

Two appointments at the Biron Division of Consolidated Water Power & Paper Co. were announced by Robert J. Mader, division manager.

John C. Grammel has joined the division's Technical Department as process engineer. Mr. Grammel, who has just completed a tour of duty with the U.S. Army, was employed as a mill chemist at the company's Stevens Point Division prior to his military leave. He is a 1955 graduate of the New York College of Forestry.

Appointment of Frank Neibauer as paper machine tour foreman has also been announced by Mr. Mader. Mr. Neibauer has been a paper machine tender.

Sales Rep for Brown

Appointment of Vincent R. LaPorte of Natick, Mass. as New England sales representative for Brown Co.'s paper sales division is announced. Mr. LaPorte will make his headquarters in the general sales offices of Brown Co. in Boston.

A native of Teaneck, N. J., Mr. LaPorte attended the School of Business Administration, Northeastern University, becoming associated with Brown Co.'s Paper Sales Division in 1956 after ten years prior experience in the paper industry with Hollingsworth & Whitney.

Promotions at St. Croix

The promotion of Elliott Miles from foreman, finishing room, to production planner; Ronald Wallace from foreman, supercalenders, to superintendent, finishing and supercalenders, and Charles Cousins from supercharger operator to foreman, supercalenders, were recently announced by the St. Croix Paper Co., Woodlands, Me.

Research Dept Promotions at Oxford

Bernhard Mayer, has been appointed assistant director of research, at Oxford Paper Co. Mr. Mayer, who is a graduate of the State College of Forestry at Syracuse University, joined the Oxford Paper Co. research department in 1950 and has been pulping group leader since 1953.

Colwyn Haskell has been promoted to pulping group leader, succeeding Mr. Mayer. Mr. Haskell has a Master of Science degree in Chemical Engineering from the University of Maine. Mr. Haskell joined Oxford in 1955 and served in the technical service department prior to joining the research pulping group.

Manager of International

Charles W. Richards has been named manager of International Paper Co.'s mill at York Haven, Pa., it was announced by Stuart E. Kay, vice president.

Mr. Richards succeeds the late Ralph Masten who had served for 18 years as mill manager until his death on Jan. 27, 1959.

Mr. Richards is a native of Needham, and graduated from the Massachusetts Institute of Technology in 1921 with a degree in Chemical Engineering. He joined International Paper Co. in 1928 as chief chemist at the company's mill in Rumford, Maine. Several years later, coincident with the curtailment of operations at the Rumford Mills, Mr. Richards joined the Oxford Paper Co. as Chief Chemist at their mill in Rumford.

He served with the Oxford Paper Co., except during a two-year period when he was named to the technical sales staff of the DuPont Co., until 1946 when he rejoined International Paper Co. as assistant manager at its York Haven Mill. He has held this position until his present appointment.

Changes at Continental Can

Theodore H. Tarbell has been appointed manager of the Continental Can Co.'s boxboard mill in Tonawanda, N. Y.

He succeeds George J. Tooker, who was named northeast regional general manager for the Boxboard & Folding Carton Division under a reorganization of that division. Mr. Tooker will move to Boston in a month or so.

Succeeding Mr. Tarbell as sales manager for the Tonawanda boxboard plant is Jay Curtis.

K. M. Hanson

Lanston Industries Elects Hanson President

Kurtz M. Hanson has been elected president of Lanston Industries, Inc., manufacturers of "Monotype" typesetting and typecasting machinery and a wide range of photo-mechanical equipment for the graphic arts and reproduction industry.

Mr. Hanson was formerly president of Champion-International Co., of Lawrence, Mass.

Consolidated W P & P Appointments

Four personnel appointments at Consolidated Water Power & Paper Co., were announced.

Jack Chinn has been appointed assistant paper machine superintendent at Wisconsin Rapids Division, according to announcement by L. W. Murtfeldt, division manager. Mr. Chinn is a graduate of Cornell College and attended the Institute of Paper Chemistry before joining the company in 1954. He has served as assistant to the paper machine superintendent since 1957.

Appointment of Alvin Haferman, former Wisconsin Rapids Division night superintendent, as assistant to the industrial engineer was also announced. Carl Bremmer has been named to succeed Mr. Hafeman as night superintendent.

Leo N. Reiman has been appointed a tour foreman as Wisconsin Rapids Division. Mr. Reiman joined the company in 1933.

Asst Technical Dir. For Westvaco

Dr. William D. Major has been appointed to the post of assistant technical director at the Covington plant of West Virginia Pulp and Paper Co. Before joining West Virginia, Dr. Major was employed as a project engineer with the Container Corporation of America in Brewton, Alabama. He is a graduate of Colgate University where he earned his bachelor's degree in Chemistry. Dr. Major also studied at The Institute of Paper Chemistry. He graduated there in 1957 with MS and PhD degrees.

While attending Colgate and The Institute of Paper Chemistry, Dr. Major gained experience in the paper industry through summer employment with the Lowe Paper Co., Crossett Paper Mills Co. and Crown-Zellerbach Corp.

In his new post, Dr. Major replaces W. H. Wiseman who was promoted several months ago from assistant technical director to assistant paper mill superintendent.

American Paper Exports Exec-V.P.

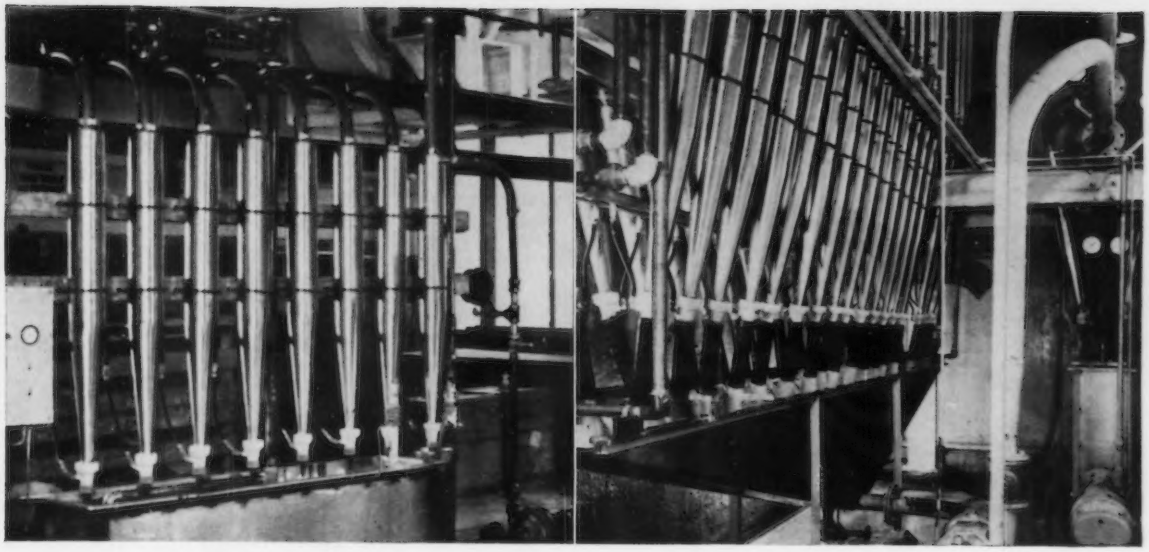
William D. Hurlbut has been elected executive vice president of American Paper Exports, Inc., it was announced by Irving C. Baldwin, president. American Paper Exports (Apex) is the export division of International Paper Co., handling export sales in Latin America, Europe, South Africa and the Far East.

Mr. Hurlbut, whose father, the late William N. Hurlbut served as a vice president and a director of International Paper for many years, joined the company in 1952 following military service overseas. After several assignments in other sales divisions of International Paper he joined Apex in 1956 and was elected a vice president of the subsidiary in 1957.

Personnel for Khulna Mill

C. W. E. Locke, mill manager of the newsprint plant under construction at Khulna, East Pakistan, has announced the appointment of a number of Americans and Canadians to supervisory positions. The mill, due to start up this spring, was designed by Sandwell & Co. of Vancouver, B. C. The Sandwell organization has a contract to manage the mill for the Pakistan Industrial Development Corp.

William F. Stidwill is assistant mill manager. He was formerly with the Howard Smith Paper Mills in Canada and immediately prior to joining the Sandwell organization was mill manager for Alliance Paper Mills at their Lybster, Ontario operation. Forest manager is H. P. Ellis. Mr. Ellis had a number of years experience in woods operations in the Pacific Northwest with Crown Zellerbach and for the past four years was forest manager for the Pacific Pine Co. Donald P. Wymess is plant engineer. His most recent post has



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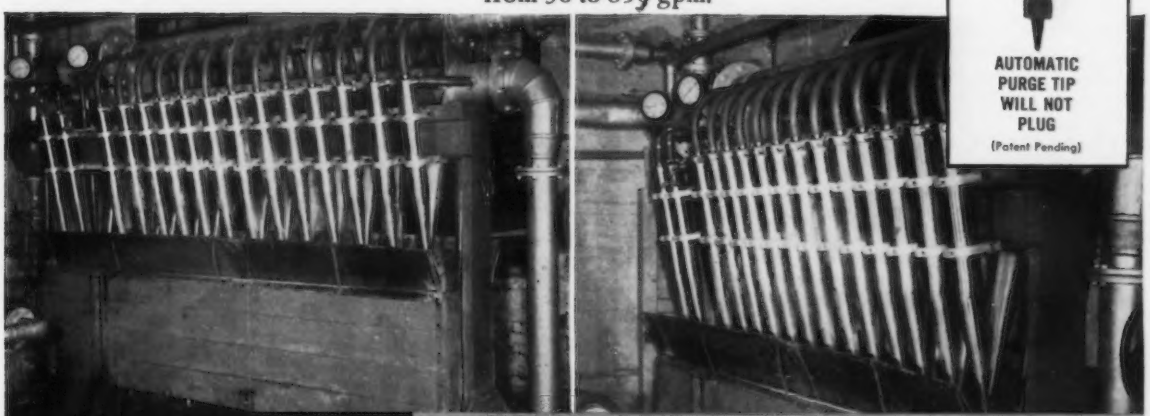
- marked increases in machine output

Bird Cycleans are available with *non-plugging purge tip.* They come in 4″, 7″ and 12″ dia. with inlet capacities from 36 to 859 gpm.

AUTOMATIC PURGE TIP WILL NOT PLUG
(Patent Pending)



BIRD MACHINE COMPANY

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Canadian Manufacturers of Bird Machinery
CANADIAN INGERSOLL-RAND COMPANY, Limited, Montreal

been that of project engineer at Sandwell's head office in Vancouver with responsibility for the overall design of the Khulna mill. Elmer E. Davis has assumed the post of general superintendent. Mr. Davis has many years of experience in newsprint, specialty papers, tissues and kraft with Crown Zellerbach at their Port Townsend, Wash. and Lebanon, Ore. mills. For the past 12 years he held the position of paper mill superintendent. Arthur Palmer, recently appointed groundwood superintendent for the Khulna mill is also now at the site. Mr. Palmer has spent over forty years in the pulp and paper industry, chiefly with Crown Zellerbach Corp.

Tennessee Appointments

Tennessee River Pulp & Paper Co. has made the following appointments for its mill to be built in Counce, Tenn.

General superintendent — Ray F. Cuyle, formerly production manager, Hollingsworth-Whitney Div., Scott Paper Co., Mobile, Ala.; plant engineer—Cecil Carter, formerly plant engineer, North Carolina Pulp & Paper Co., Plymouth, N. C.; comptroller and assistant treasurer—George O. Griffith, formerly assistant treasurer, Ohio Boxboard Co., Rittman, Ohio; and chief accountant—Harry D. Wilson, Opa Locka, Fla.

Changes in St. Regis

St. Regis Paper Co. announces the appointment of Gordon C. Inskeep as administrative assistant to Dr. Kenneth A. Arnold, technical director of the company.

Mr. Inskeep has a B.Ch.E. degree from Ohio State University and has done graduate work at the Institute of Paper Chemistry. He is a member of the American Chemical Society, American Institute of Chemical Engineers, TAPPI, and Tau Beta Pi. His headquarters will be in the New York Office.

In the Central Technical Customers Section, under the supervision of Gordon L. Benson, the kraft paper and board technical service group is now organized to function with the following personnel: Milton R. Roberts is the administrator of technical service to customers of the Kraft Division. He is located at the New York Office. John T. Freymeyer is the kraft division technical service to customer representative located at Pensacola, Fla. Robert T. Callahan is the technical service to customer representative servicing the kraft division in the Chicago area. He will be located in the Chicago office.

K. O. Wassen

Wassen Appointed To New Post

Appointment of Kurt O. Wassen to the new post of commercial superintendent of West Virginia Pulp and Paper Co.'s Bleached Board Division in Covington has been announced.

Mr. Wassen was formerly supervisor of administrative service, a post he has held for the past two and a half years. Previously he was a member of the administrative service group and had joined the staff of the Covington plant in 1955. From June, 1955 to March, 1956 he was employed as an engineer in the technical service department.

Mr. Wassen is an engineering graduate of Lafayette College. He also holds an MBA degree from the Graduate School of Business Administration at Harvard University.

Mr. Wassen will be responsible for a number of the Bleached Board Division's administrative and service functions including plant protection, Westvaco Clubhouse, purchasing, internal auditing and systems, market research, administrative service and the main office functions of traffic, order and billing, accounting and tabulating.

Owen Joins Allied as VP

L. B. Owen, with twenty-seven years of experience in the pulp and papermaking industry will join the Allied Paper Corp., as vice-president in charge of manufacturing for the paper mill division in Kalamazoo, Michigan.

According to the announcement by Dr. Ward D. Harrison, president of Allied, Mr. Owen, who is now in Lima, Peru, will start his new duties soon after the middle of March. For the past five years, Mr. Owen has been active in the paper industry of South America. Until now, he has been consultant and manager for W. R. Grace and Co.'s paper department in Lima. There he helped in the planning, construction and operation of a bagasse pulp and paper mill.

Previous to this connection, he was vice-president and general manager of C. I. C. C. S. A. in Montevideo, Uruguay. Before leaving for Montevideo, he acted as general superintendent of the P. H. Glatfelter Co., Spring Grove, Pa.

Fibreboard Creates New Position

Appointment of Jack L. Davies to post of director of market planning for Fibreboard Paper Products Corp. was announced by E. W. Carey, vice president—marketing.

"Creation of this position is another important step in our program to utilize the most advanced methods in marketing the diversified line of Fibreboard and Pabco products," Mr. Carey said.

Container Corp Names Gen. Mgr

The appointment of William A. Keiss Jr. as general manager of the Chattanooga paper mill of Container Corporation of America was announced by the company.

Mr. Keiss was advanced from sales manager of the paper mill. In his new position he will be in full charge of all production operation of the paper manufacturing division, it was explained.

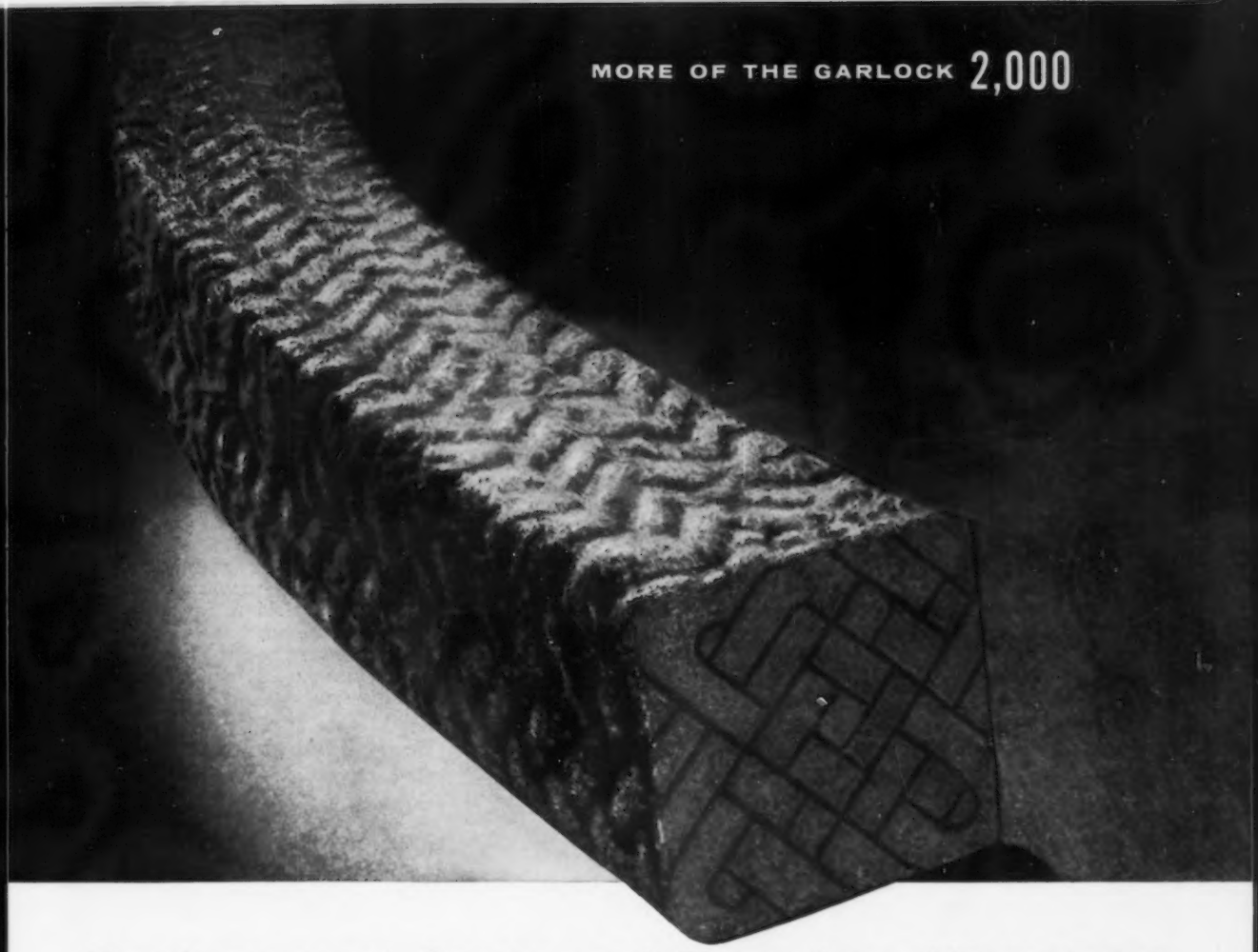
G. W. Shelhammer Retires from Union Bag

Glenn W. Shelhammer, western manager of kraft paper sales for Union Bag-Camp Paper Corp., retired from the company on March 1st.

Since joining the company as a salesman in 1928, Mr. Shelhammer has held several sales managerial positions with the company. In 1941 he was appointed western sales manager of the standard products division and, in 1946, western district manager of multiwall bag sales. He became western sales manager of bag and paper products in 1952 and held this position until his most recent appointment in 1958.

Move for C-Z Asst. Resident Mgr.

Preston C. Read, Crown-Zellerbach Canada assistant resident manager, Ocean Falls mill—to CZ Canada assistant resident manager, Richmond box and converting plant.



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LONGER PACKING LIFE, Garlock LATTICE-BRAID Packings employ a through-and-through braiding construction. As illustrated above, each strand passes diagonally through the packing body at a 45° angle. This unique construction makes a completely unified structure, resulting in greater strength. And, since there is no single outer braid or cover to wear through, Garlock LATTICE-BRAID will wear far beyond the limits of ordinary packings. Less gland pressure is required to effect an adequate seal, resulting in longer sleeve and packing life, less downtime and maintenance.

LATTICE-BRAID PACKINGS OF PURE TEFLON YARN reduce process shutdowns wherever severe operating conditions are encountered. They are recommended for use on high-speed centrifugal pump shafts, reciprocating rods and valve stems against acids, caustic solutions, edible liquids, paper pulp and other products for which non-contamination is a requisite. The chemically inert Teflon yarn is non-contaminating, tough, yet resilient for effective sealing, and provides cooler operation under extreme temperatures (+500°F) and resistance to chemical exposure.

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PJT NEWS OF CONVERTERS

R. H. Martin

F. P. Brophy

Standard Packaging Names Martin to Executive Post

R. Carl Chandler, board chairman of Standard Packaging Corp., New York, has announced the appointment of Ralph H. Martin as assistant to the president.

Mr. Martin is a graduate of Carnegie Institute of Technology, Pittsburgh, Pa., and holds both a Bachelor of Science degree and his Masters in Chemical Engineering. He served in the Research and Development Division of Consolidation Coal Co., and later, as general manager, Mr. Martin initiated a new chemical operation for this company.

He was recently associated with Dixon Chemical and Research, Inc., as vice president.

Mr. Martin's immediate assignment in his new post will be concerned with Standard Packaging's metallized paper operation.

Sefton Promotes Tower

The appointment of Arthur W. Tower as general sales manager, Fibre Can Division of the Sefton Fibre Can Co., has been announced by C. Berger Graves, vice president.

Formerly assistant sales manager for Sefton—a Division of Container Corporation of America—Tower will now be responsible for the sales, advertising and product development of the company's Fibre Can Division. He joined Container Corporation in 1949 at Philadelphia, after his graduation from Brown University. Following his sales experience in this initial post, he transferred to Sefton in 1956 as assistant sales manager.

Eastern Sales Mgr. For O-I

Frank P. Brophy, a veteran of eight years in the paper and corrugated carton field, has been named Eastern division sales manager for the Mill Division of Owens-Illinois Glass Co., George H. Olvey, vice president and manager of board sales, announced.

Mr. Brophy will have his office in the Owens-Illinois suite in the Chrysler Building.

Mr. Brophy leaves the position of assistant sales manager of the paperboard department of St. Regis Paper Co., which he joined in 1949.

Diamond Gardner Acquires Hoosier Containers

Contracts have been signed for the purchase of all of the shares of stock of Hoosier Containers, Inc. and New Castle Realty Corp., New Castle, Ind., in exchange for 43,594 shares of Diamond Gardner Corp. common stock. The New Castle Realty Corp. owns Hoosier's land and buildings. It is planned to merge Gardner Container, a Diamond Gardner subsidiary with plants in Dayton and Akron, Ohio, into Hoosier. Both are producers of corrugated paper products. Hoosier's name will be changed to Diamond Hoosier Containers, Inc.

Hoosier Containers was founded in 1954. At its New Castle plant, Hoosier has a 76-inch corrugator and manufactures both corrugated sheets and containers. Since September, 1958, Hoosier has managed the two Gardner Container plants. When the agreement is completed, J. C. Behringer, president of Hoosier Containers, will head the new operation. Sales headquarters, under Norris Downing, executive vice president, will move to Dayton, Ohio.

Container Corp Appointments

Everett G. Temple, general manager of Container Corporation of America's Eastern Folding Carton Division, has announced the appointment of Albert A. Austin and Jack D. Tovin as sales manager and assistant sales manager, respectively, of the company's Philadelphia and Valley Forge, Pa., carton plants.

Also announced was the appointment of William A. MacDougall as sales manager of the Boston folding carton plant.

James F. Carty, General Manager of Container Corporation of America's Chicago folding carton plants, announces the appointment of Glenn J. Brandenburg as Parafinned Carton Sales Manager for the Chicago Carton Division.

Kraft Bags and Sacks Return to Gilman

Gilman Paper Co. announces the return of kraft grocery bags and sacks to its converted paper lines. Grocery bags and sacks were staple items with Gilman more than a score of years ago. The line will be manufactured by Kraft Bag Corp., a Gilman subsidiary, from kraft produced by St. Marys Kraft Corp., also a Gilman subsidiary. The new bag plant, in Savannah, Ga., will produce a standard line of automatic grocery bags and both standard and superstandard grades of automatic sacks under the trade-name No-Tare—a name long identified with Gilman gummed sealing tapes. Sales will be handled through the Standard Products Div. of Gilman Paper Co., 630 Fifth Avenue, New York 20, N. Y. and the company's Western Sales Office, Daily News Bldg., Chicago 6, Ill. Production will commence early in March 1959.

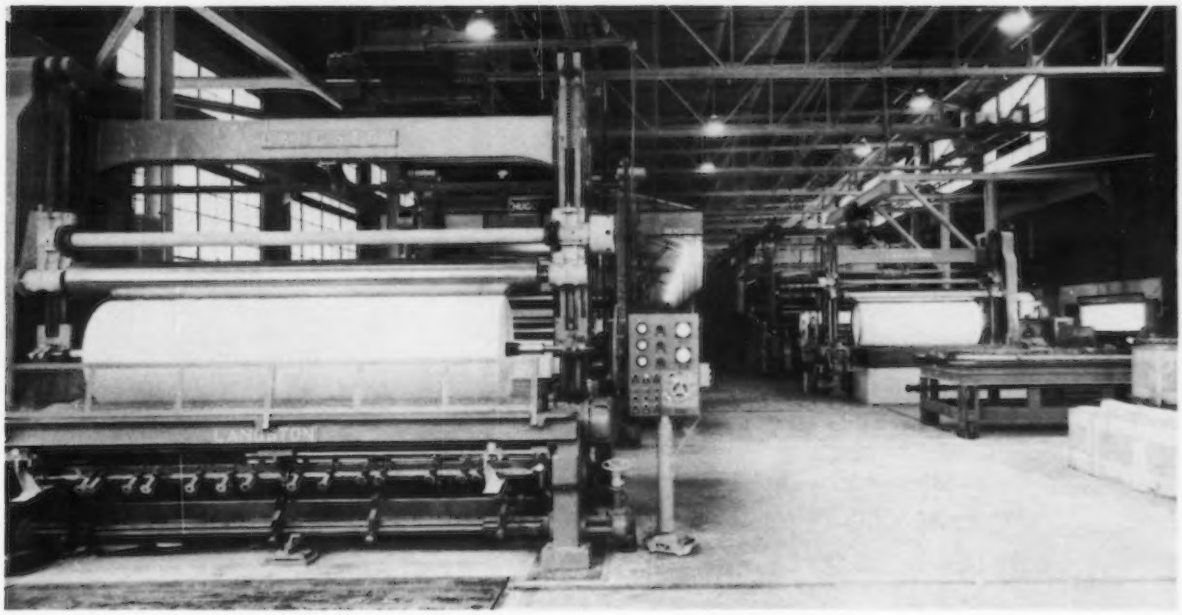
Royal McBee New Carbon Surface

Royal McBee Corp. has introduced a hard-surfaced carbon paper, Roytronic, which it claims eliminates roller marks, fingersmudging, fuzziness and dirty erasures. Royal says the plastic-coated back of its new carbon paper also eliminates copy slippage and curling of the carbon paper's edges.

THE Langston Leader
PAPER MILL EDITION
Leadership...by design
SAMUEL M. LANGSTON CO. • CAMDEN 4, N. J.
FEBRUARY 1959 | *Published quarterly for the information of paper and board mills* | VOL. 1, NO. 1

Langston Winder Plays Role

HAMILTON PAPER HIKES QUALITY OUTPUT



Langston Slitter and Winder, left, On New Paper Machine. Winder On Number Seven Machine, right.

New Paper Machine's 70-Ton Capacity Included In $4.5 Million Expansion

On the Schuylkill River at Miquon just beyond the city line northwest of Philadelphia stands Hamilton Paper Company, the inheritor of a proud tradition more than a hundred years old of papermaking at the site.

A noted producer of fine papers and the largest in the text paper field, Hamilton Paper three years ago drew up plans for a $4.5 million major expansion of equipment and facilities.

Langston Winder Selected

At Samuel M. Langston Company, Camden, N.J., it was important news. A 122-inch Langston slitter and winder for a new paper machine was a part of the expansion program.

Completed last year and in operation early in December, the expansion includes:

—A new 126-inch fourdrinier machine equipped to produce with the most modern practices 70 to 80 tons daily of bond, offset and reproduction papers.

—A warehouse providing 60,000 additional square feet of finished paper storage area and new paper shipping facilities.

New Boiler

—Additional pulp handling capacity and new power and steam generating facilities, including a new 900 pounds per square inch, 875-degree boiler of 70,000 pounds per hour capacity.

—Additional stock preparation and storage facilities, including the new refiner capacity of two new jordans and two more hydrafiners.

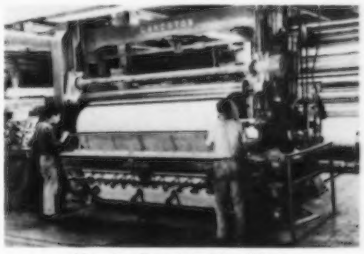
—New cutter room facilities, including a new 100-inch trimmer, back feed and conveyors.

Hamilton's Third Langston

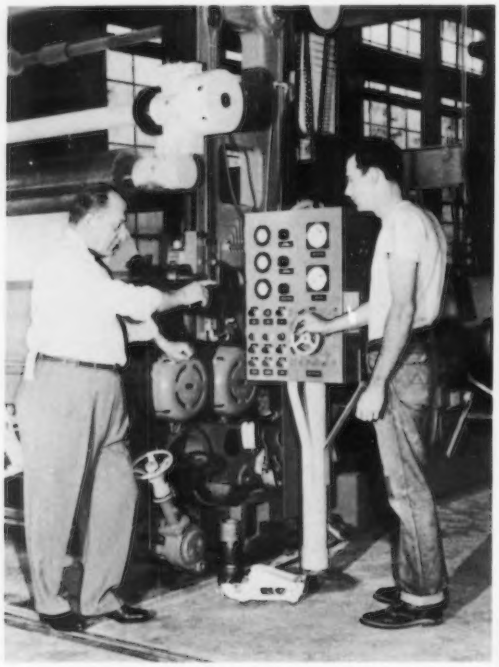
The new Langston slitter and winder is the third to be installed at Hamilton Paper.

Of the decision to place a Langston winder on the new paper machine, John W. MacAllister, director of power maintenance and construction, says: "Our Langston winders on the number two and number seven machines

(Continued on Next Page)



Number Two Machine Winder



PUSHBUTTON CONTROLS. John W. MacAllister, left, director of power maintenance and construction, discusses controls with operator of new Langston slitter and winder. Right, operator and assistant tape down paper to core for new run.

Langston Slitter And Winder Features Credited With 60 Percent Sales Rise

Langston built 60 per cent more slitters and winders and slitters and rewinders for paper and board mills in 1958 as against 1957, the Company announced.

The increase was attributed by Vice President—Sales E. B. Seeger to new labor-saving and quality raising features and to more service for the paper and board industry.

Seeger said the new features include shaftless unwind stand constant tensioning and on winders and rewinders, exceptionally dust free, shear cut slitters; more uniform roll density provided by a patented rider roll drive and loading arrangement; improved spreader devices, hydraulic roll drop and roll ejector; and all-around heavier, extra rugged construction.

The new Langston installations included machines for use behind paper and board machines and slitters and rewinders for finishing rooms and for convertors.

Involved were the second recent Langston paper machine winder for one mill and the third recent winder for another. One multiple installation included three slitters and winders for a paper mill.

Langston Winders Play Role At Hamilton Paper

(Continued from Page 1)

have been virtually maintenance free, operating on an average of 4200 hours per year. And we are very satisfied with the rolls they are producing.

Quick With Service

"Our men know the Langston machines. And when we need service, Langston has always been quick to respond. We agreed the new winder for our number eight machine had to be a Langston."

The new winder is a 122-inch wide, type DA, driven by a variable speed DC motor with V-belt drives to the main drums and to the rider roll. It is built to slit and wind rolls of any diameters up to 60 inches at speeds up to 3000 feet per minute.

Automatic Air Brake

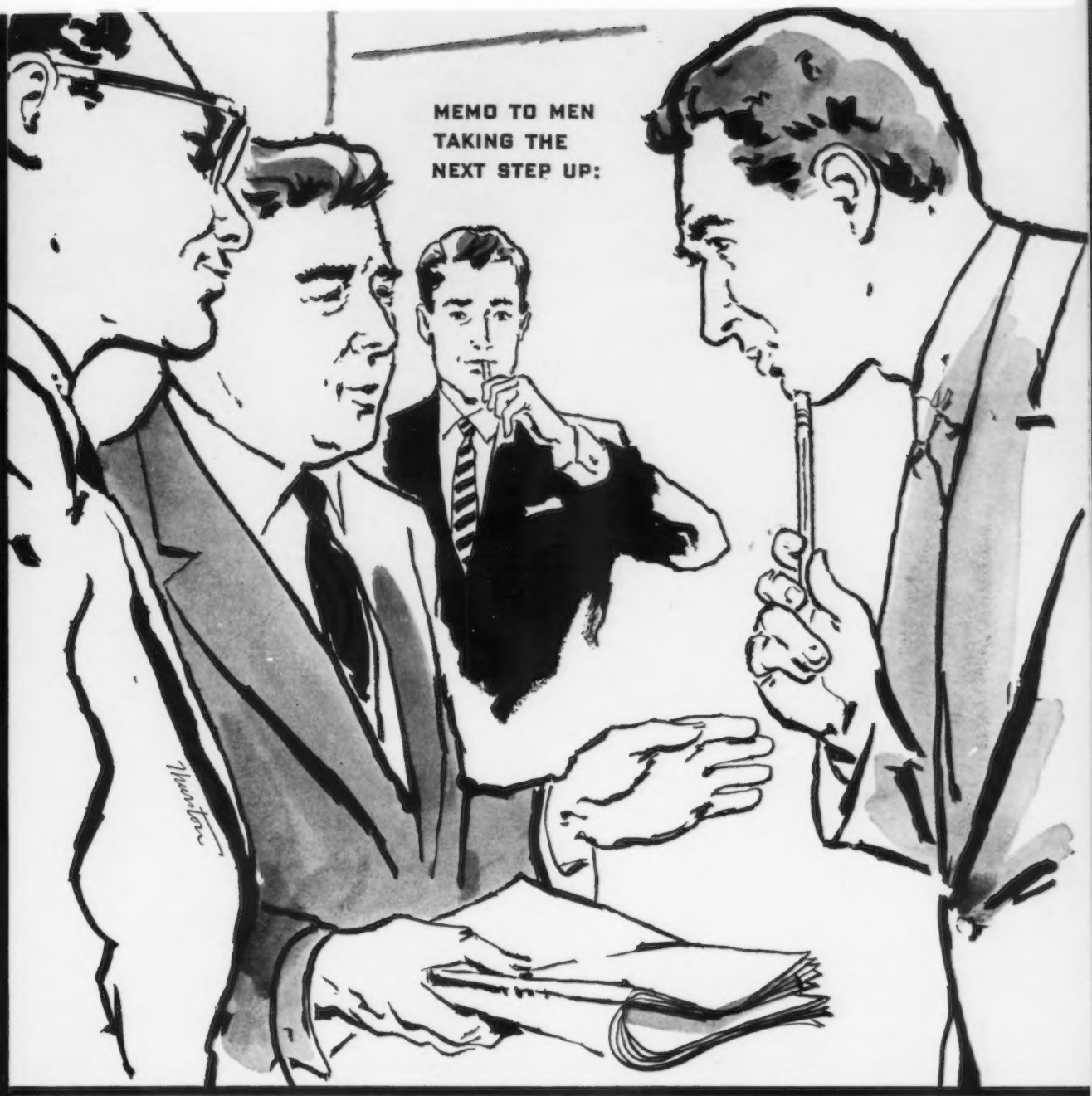
An automatic air brake quickly stops operation when a predetermined diameter is reached. The brake also operates to maintain more accurate tension control on the paper.

A pushbutton control panel enables the operator to regulate the functions of the winder from one spot.

Output to Rise 30 Percent

Slitting and winding a wide variety of high quality papers, the new Langston winder is performing its important role with the whole new cast of Hamilton Paper equipment and facilities in boosting output.

Even with planned retirement of two of the present eight paper machines, Hamilton Paper will have the capacity to increase its production by more than 30 percent. The new Langston winder will play its part in providing this additional capacity.



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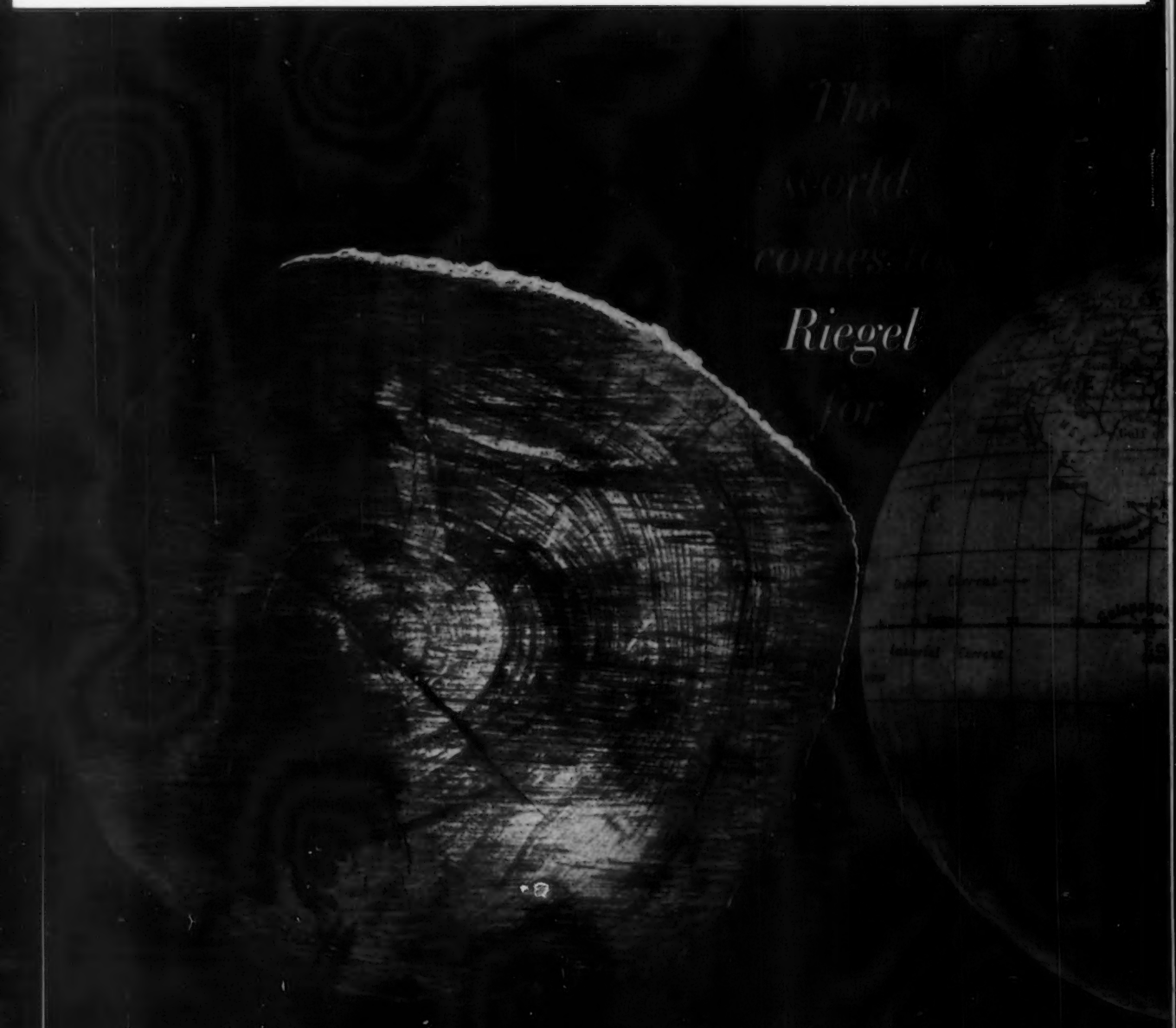
Paper Trade Journal



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Chlorine Dioxide Bleached Softwood Sulphate

Chlorine Dioxide Bleached

balanced

paper-grade pulps

created by paper makers for paper makers

One of a series of advertisements prepared by THE ASSOCIATED BUSINESS PUBLICATIONS

Hardwood Sulphate

Riegel Paper Corporation

How the Industrial Engineering Dept. at Downingtown Paper Co. is Organized

Because of the misunderstanding and confusion on what industrial engineering is and what it does, we persuaded the author to prepare this article for our readers.

H. H. Treuting,
Manager,
Industrial Engineering Dept.,
Downingtown Paper Co.,
Downingtown, Pa.

Late in the year of 1956 the Downingtown Paper Co. was completing a picture of organizational needs required to plan and manage the operations of the company on a greatly expanded basis. This expansion was accomplished in two forms. The first was that of acquiring two paper box companies; the second that of complete modernization of the No. 2 board mill and the stock preparation system for both No. 2 and No. 3 mills.

Because of the myraid problems associated with such an extensive expansion program, management decided to develop and enlarge its technical staff organization as a means of providing specialized assistance to management in the solution of these problems as well as problems of future growth. The industrial engi-

neering function was added as a part of this technical organization.

Place In Organization

Industrial engineering is one of four technical service groups reporting to the general manager of technical services who in turn reports to the vice-president of administrative services. All four technical groups, consisting of design engineering, industrial engineering, research engineering and technical control, are set up to provide specialized technical assistance to executive and general management and to the operating managements of the four company plants. These plants include: Downingtown Paper Co. (DOPACO); Downingtown Paper Box Co. (DOBOX); and two Simplex Paper Box Co. plants located at Lancaster and Lititz, Pennsylvania.

Each group has the prerogative of communicating directly with members of all divisions and groups within the company to discuss problems and obtain information pertinent to projects under study. They are also free to examine overall company operations as a means of locating sensitive areas where appropriate technical assistance will aid in strengthening current or anticipated weaknesses.

Its Introduction To Personnel

As is the case with all things new, there was a considerable amount of curiosity generated. People wanted to know what this new function was all about; what it did; how it operated and how it was going to affect them. Whenever these questions arose, an effort was made to supply understandable answers.

The words and terms used to define the function varied depending upon the background and education of the person requesting the definition. These terms varied from the expert expert's "Dictionary Type" of definition that describes **Industrial Engineering** as —"The engineering approach applied to all factors, including the human factor, involved in the production and distribution of products and services," to the down to earth explanation of — "applied horse sense."

These definitions were further developed by defining the "Industrial Engineer" as a problem solver who is continually confronted with all sorts of problems concerned with improving the production and distribution of products and services. He is a person who by nature and training believes that there are always better ways of doing things. He further believes that continual effort must be expended in finding new and better

ways—for this means progress. And progress as we think of it is in terms of supplying customers with more and better products and services produced in greater quantities at the lowest possible cost.

It was further explained that this need for finding improved ways of making more and better products faster and at less cost is a responsibility that is shared with all other members of the Downingtown Paper Co., both management and labor. The industrial engineer's share of this three-fold responsibility of quality, service and price is directed toward providing advisory assistance to manufacturing management in the specialized areas of "Manpower, Machines, Materials and Methods." This we refer to as the 4-M's, which add up to another important "M"—money.

Industrial engineering is a staff function . . . it suggests, advises or acts as a consultant. It has no authority to direct an installation or use of a method.

I. E. Work Assignments

The industrial engineering work load as well as those of the other technical groups are developed from four sources. Requests from executive and general management, requests from operating management and from projects initiated by the industrial engineering group who feel that their services will significantly benefit a phase of the company's operations.

All requests are analyzed to determine potential savings and other important benefits. Those that are expected to yield the greatest returns are given top priority. The group's work load schedule is established accordingly and all such schedules are approved by executive and general management. These schedules extend beyond one year. Periodic reports are submitted to the general manager of technical services comparing the group's progress with the scheduled work load.

The schedule per se is held firm for six months and is subject to thoughtful review near the end of the sixth month. At this time the schedule is revised and updated as necessary to provide a firm picture of the group's planned operations for the next six month period. Flexibility is built into the schedule to provide necessary engineering assistance to those who require aid in a crisis or when a crash program is introduced. This flexibility is accomplished by reserving a percentage of available engineering hours per month for such authorized usage. The percentage is based on careful analysis of the preceding six months demands and on crash program demands that can be anticipated for the next six months. An anticipated need for engineering hours that is less than or more than the actual demands of the preceding six months

will affect the completion dates of scheduled major projects and, therefore, the schedule is revised to reflect these changes.

Crash programs are considered separately from unpredictable crises because they can be forecasted far enough in advance to permit some planning and because they will generally require more than twenty engineering hours to complete. Such programs originate because of the introduction of a new product, a new process or as the result of a recommendation developed from work done on another project which has turned up potential savings significant enough to warrant prompt action.

Time is also provided in the schedule for routine administrative functions and for participation on such company committees as technical staff, product, suggestion and on conference programs. Approximately 20 percent of available engineering hours are expended in these areas.

Approach To Areas Of 4-M's + 1

As staff service specialists in the areas of 4-M's + 1, the group is responsible for providing operating management with recommendations outlining ways and means of reducing and controlling manufacturing costs. All recommendations are carefully studied to be sure that the quality of the product will be either maintained or improved. This same consideration is given to the effects of the recommendations on customer servicing.

The group's work assignments take the engineers into all plants and manufacturing processes as well as into occasional non-manufacturing activities. As a result there is considerable diversity in the types of projects assigned to the engineers. This adds interest and challenge to the work as well as providing excellent training. To assist the individuals and the group as a whole in maintaining a company oriented approach to finding solutions to operating and management problems, a check list for analysis and follow through of all job assignments was developed. This eleven point procedure is shown in the table.

Application To 4-M's + 1

The bulk of projects that appear on the industrial engineering work load schedule are, of course, those aimed at reducing manufacturing costs. Each of these projects are first studied in light of the "Check List" to orient the engineer to the full scope and meaning of the assignment. Following that, the manufacturing process or processes to be studied are analyzed to determine the current method costs for manpower, materials and machine time.

The industrial engineer is a problem solver who is continually confronted with all sorts of problems concerned with improving production and distribution of products and services.

The engineers first concern then is to determine which of these factors represents the greatest cost. The most costly "M" (Manpower, Materials, or Machine utilization) is then subjected to more detailed study and analysis to determine what can be done to obtain more effective uses of that factor of manufacturing and therefore reduce its cost. This is followed by detailed study of the second most costly "M" followed by the third most costly.

When manpower is found to be significantly costly, a study is made of the "Methods" (the 4th "M") employed in the operation. First the methods that should be employed are recorded and compared to the actual methods used in order to determine any significant differences. This is followed by a time study of the operation performed according to prescribed methods. The study is made by breaking the operation down into specific work elements involved and recording the time required to complete each of them. Sufficient studies are made to insure accurate evaluation of the time required to perform each element of the job for an average skilled worker. The results of the study are analyzed to determine if any of the work elements can be eliminated, modified, varied in sequence or combined so that the net result is one of less work and therefore reduced man hours. All such changes must also be considered as to their effect upon quality. All proposed changes must maintain or improve upon the quality level of the product.

Whenever machine costs prove to be significant, a study is made of the machine. Elements of loading, unloading and running time are studied to determine where Method changes can be made to effect savings by increasing the productivity or out-put of the machine. Any proposed changes must be analyzed to determine their effect upon the quality of the product produced as indicated in

Check List
For
Analysis And Follow-Thru Of Staff Job Assignments

1. Consider the goals of the company.
2. Consider the needs of the company in attaining these goals.
3. Determine how the assignment will effect attainment of these goals.
4. Consider other possible implications of the job assignment and gauge their impact upon company operations.
5. Analyze the assignment and determine the approach or approaches that will lead to accurate, complete and constructive recommendations.
6. Determine the amount and form of data required to solve the assigned problem.
7. Determine the amount and form of information and facts that will be needed to build and support constructive recommendations.
8. Periodically, during the course of the job, review the assignment keeping foremost in mind the scope, objective, implications and the need for prompt constructive recommendations.
9. Design a format for reporting the results obtained that will clearly present the objectives of the assignment, the recommendations that will lead to their attainment, the conclusions, facts and information necessary to satisfactorily support the recommendations.
10. Write the report according to the format in clear, logical and concise form so that those responsible for acceptance and implementation of the recommendations will clearly understand the proposal, be able to concur with the recommendations and have confidence that proper implementation of the proposal will yield the desired results.
11. Check and recheck the report to insure that all recommendations are valid and are the result of accurate interpretation of facts and data and that they provide conclusive support to recommendations that will assist management in attaining specified goals.

the preceding paragraph. When quality can be maintained or improved the cost of making changes is determined to make sure that the potential savings will return the cost in a reasonable period of time. The effect of proposed changes upon the manpower needed to run the machine must also be evaluated and manpower added or subtracted from the machine crew as required and their effect upon potential savings included in the recommendation.

Significant material costs are studied and analyzed to determine whether the material itself is costly, or whether there is excessive spoilage and waste involved in the process. When waste and spoilage appear as excessive, studies are made on the handling of the Material, the losses involved in set-up of the machine or operation, the running of the machine or the performance of the operation or in the unloading, finishing and packaging of the product. Corrective methods are developed and reviewed to determine their effect upon quality of product, work load of manpower and the cost of installing the method as compared to the potential savings involved.

Improved Methods Procedure

The engineers are constantly on the alert for methods of using manpower, machines and materials more effectively. Their procedure for developing improved methods can be summed up as:

1. Collecting all the important facts involved in the particular step of manufacturing board or boxes that is under scrutiny.
2. Analyzing these facts to determine their influence and importance in this step of manufacture.
3. Arranging these facts in different patterns to form several ways of doing the job.
4. Comparing and testing these different ways to select the least costly one that satisfies the requirements for high quality and prompt customer service.
5. Recording the findings and conclusions drawn from the several methods of doing the job.
6. Developing and preparing for manufacturing management recommendations on the least costly method that will improve the effectiveness of manpower, machines and/or materials.

Proposed methods changes that prove to be a valid means of reducing costs are written up in the form of recommendations. These are submitted to Management for their consideration and acceptance. The responsibility for installation of the Method is up to the management of

the operation for which the method is proposed. Industrial engineering is a staff function . . . it suggests, advises, or acts as a consultant. It has no authority to direct the installation or use of a method. It will, however, assist manufacturing management in following up the progress of the installation of new methods and assist in measuring results of the New Method during the early stages of its use. Results of accepted recommendations are compared to the estimates made by the engineer. These comparisons provide a measure of industrial engineering's value and success.

Typical Major Project

The first project assigned to the new function was a study of the practicability of consolidating certain laminating operations at one location. These operations consisted of laminating board to board, and paper, foil and other materials to board in both roll and sheet form. These operations at that time were spread over two of the three board mills.

Consideration of the assignment indicated that several significant advantages could be obtained if such a consolidation could be made.

1. Consolidation of laminating operations at one location under a specialized supervisory group would bring about improved quality of product and increased productivity of manpower and machines.
2. Board mill supervision, relieved of the laminating processes, could devote more thought and effort toward improved board quality and increases in productivity of board making machines.
3. Relocation of laminating operations away from the board mills would provide much needed space for board mill expansion requirements.

Analyses of all aspects of laminating for the processes of pasting, paste cutting, combining and lining were made. These analyses included:

1. Volume of product made in each process.
2. Raw material and in process inventory requirements for each process.
3. Finished goods inventory levels for each process.
4. Productivity rates for equipment in each process.
5. Manpower requirements for each process.

Industrial engineering may be defined as the engineering approach applied to all factors, including human, involved in production and distribution, and has been described as "applied horse sense".

6. Equipment layout requirements — floor space — head room.
7. Mechanical and electrical service requirements.
8. Shipping and receiving requirements.
9. Clerical and supervisory requirements for control of manpower, machines and materials.
10. Anticipated growth of sales for each product type.

The figures and facts developed from the above analysis were translated into the total square feet of manufacturing, storage and office space required to house the consolidation. This requirement was compared to the areas that could be made available for such operations. In addition to adequate floor space were the considerations of head

room, floor capacity, minimum column spacing, availability of power and water and steam, loading and unloading facilities, etc. Adequate housing was found in a plant adjoining the paper mill.

Planning Consolidated Operation

A detailed layout of all necessary equipment was prepared using two dimensional scaled templates. The layout was designed to provide straight line flow from raw materials through manufacturing processes to finish goods storage for pasted, combined and lined products. Layout preference was given to the processes involved in manufacturing the "Royal Rigid" line of products since this represented approximately 60 per cent of the total laminating tonnage.

Storage areas were defined for each type of raw material normally kept in stock. Sufficient space was provided to meet inventories leve's required to operate on a three-shift, six day per week basis. Areas were laid out for optimum utilization of space that would permit first in first out usage.

In process storage areas were set up to hold three pasting machine shifts of work which is regarded as a necessary safety stock between the pasting and paste cutting operations. Accumulation areas are provided at the end of each process for several skid loads of finished product awaiting transfer to finished goods storage. Finished goods storage areas were designed to hold an average of three days of production for each process. Paper board manufacturers characteristically work with only a few days back-log. Therefore board is frequently shipped only a few hours after manufacture. Items that are made for stock are transferred to a warehouse to await shipping release.

The design of the facility was such that future expansion could be handled economically.

Preliminary manning charts were developed showing the distribution of manpower by process, machines and shifts. Outlines of required clerical procedures and clerical manpower were developed and included in the recommendations.

A report was prepared and submitted to the executive committee recommending the consolidation of laminating processes as outlined above. Along with the above were recommendations for complete methods studies on the four processes, setting of standards for performance evaluation, a schedule of machine moves to minimize interference with production schedules and provision for cleaning, repair and/or overhaul of all equipment to be moved to insure starting up the new facility with equipment in good operating condition. All recommendations were accepted and implemented.

Results From Consolidation

The consolidated facility has been in operation for approximately 18 months. Productivity has increased approximately 10 percent for one process and almost 25 percent in two others. The guillotine cutting operations are performed with two cutters instead of the three required when the process was performed in two locations. The released cutter became the replacement for an old worn out cutter and obviated the purchase of a new one.

The success of this consolidation is due to the effectiveness of first and second line supervision that have become specialists on the laminating processes for a great variety of products. They are immeasurably aided by two sources of operating information:

1. A complete written picture of the least cost methods of manufacturing each product.
2. A daily performance report, based on standard hours earned on each machine, that tells him of the effectiveness and utilization of his manpower and his machines.

Supervisory Organization Studies

With the introduction of automation at Dopaco, management became vitally interested in the amount and type of supervision that would be required to operate an almost completely automated paper board mill. A project was duly authorized and assigned to industrial engineering.

Considerable time was spent analyzing the assignment to determine the approach or approaches that would lead to accurate and complete answers. It became apparent that certain very basic and fundamental premises existed that defined the responsibilities of a supervisor regardless of the methods of manufacturing.

These premises are:

1. The future of Dopaco is contingent upon a continuity of operation at an optimum rate of growth with a fair profit return and with a practical minimum of capital investment.
2. That in order to achieve 1, the company must produce its products:
   At a quality level equal to or better than competition.
   At a price that is competitive.
   With a service policy that will satisfy all reasonable customer requirements.
   At optimum utilization of men, machines, materials and facilities.

These two premises are of course a fundamental responsibility of all levels of management. The second premise was used as the basis for defining the responsibilities of line management since it is directly concerned with producing Dopaco products in the terms specified within the premise.

Factors Of Responsibility

In order to produce products at the quality, price, service and utilization levels specified in 2 above, several factors of responsibility must exist:

1. **Planning**—To preplan the use of machines, men, materials and facilities in the manufacturing of board to achieve the optimum in quality, price, service and utilization.
2. **Control-Coordination** — To coordinate planning, and to follow-up on the scheduling of machines, men, materials and facilities to achieve optimum results in quality, price, service and utilization.
3. **Problem Solving**—To recognize a problem, analyze it, appraise it and to determine corrective action or refer it to appropriate sources for solution. To anticipate a problem and prepare solutions rather than handle problems on a crisis basis so that optimum results in quality, price, service and utilization can be achieved.

These three factors imply "Management" since they call for a sense

Industrial engineering is directed toward providing advisory assistance in the specialized areas of Manpower, Machines, Materials and Methods, the 4-Ms. The engineer's first concern is to determine which of the 4-Ms represents the greatest cost, and selects this for detailed analysis first.

of responsibility, judgment, knowledge, experience and skill. The amounts of each required in the process were used to determine where and how much supervision would be needed in the following phases of paper board making:

Pre-Stock Preparation—Raw Materials Handling & Storage.
Stock Preparation.
Stock Refining.
Wet End Paper Board Making.
Dry End Paper Board Making.

Other facets of a supervisor's job such as employee relations, safety, organization development, reports and records were not used because they are not indicators of the amount of supervision that the process requires to obtain optimum results in quality, price, customer service and utilization.

Analyzing Automated Board Making

The study method was that of complete analysis of the various phases of automated paper board making to establish the control points in the process that are critical insofar as the maintenance of optimum product quality and productivity are concerned. Once these points were established they were analyzed to determine the methods used for control. These methods indicated the amount of judgment, knowledge, experience and skill required to keep the process under optimum control. The degree that planning, control-coordination and problem solving was needed was also considered for each control point.

Control methods for maintenance of desired levels of quality that involved corrective action based on visual inspection for obvious defects or contamination required little in the way of judgment, knowledge, experience and skill and can be readily performed by unskilled personnel. Controls that require repetitive testing of the product by established test procedures which yield results indicating specific corrective measures such as pH, acidity, freeness and consistency require some knowledge, experience and skill.

Other control methods involving tests whose results indicate that the process is out of control but do not indicate where or the extent that correction must be made will require more judgment, knowledge, experience and skill than the preceding two methods.

The control methods for maintenance of optimum productivity also have a pattern of the degree of judgment, knowledge, experience and skill required. Productivity rates preset by formulated batch sizes, and pulping cycle times require minimum judgment, knowledge, experience and skill. Productivity rates which are established by a succeeding operation will require some degree of judgment, knowledge, experience and skill above the preceding example.

When machine speeds are not preset or controlled by a preceding or succeeding operation but are the result of skillful machine adjustment to obtain optimum productivity rates the degree of judgment, knowledge, experience and skill are considerably higher than that required in the two examples outlined in the succeeding paragraph.

Productivity has increased approximately 10 percent for one process and almost 25 percent in two others. The three factors, planning, control-coordination and problem solving imply "Management" since they call for a sense of responsibility, judgment, knowledge, experience and skill.

Optimum customer servicing is attained when standard quality products are produced in required quantities, properly packaged in time to meet shipping dates specified by the customer. This obligation of supervision is fulfilled when the schedules set by the scheduling department are adhered to. This entails the planning of men, machines, materials and facilities in a coordinated manner that insures optimum control of the manufacturing process. Planning such as this requires considerable judgment, knowledge, experience and skill.

Preservation of capital investment is done through planned procedures for routine checking and evaluating the condition and capability of equipment to produce scheduled production at desired rates. It means that mechanical problems are to be anticipated and that corrective action is planned and scheduled before breakdowns occur. Satisfactory performance of this responsibility calls for judgment, knowledge, experience and skill.

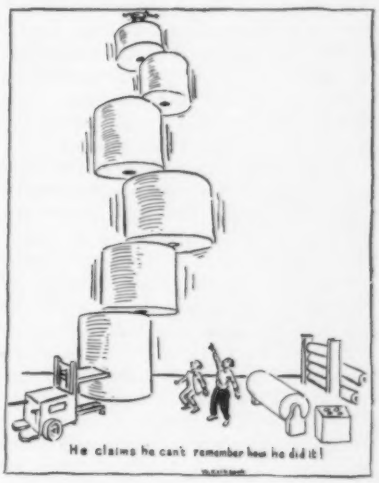
Each phase and control point of the board making process was examined and evaluated by the type of control problems that were likely to occur, the type of decisions that had to be made to correct the problems, the planning and maintenance problems that would require solving in light of the criteria outlined in preceding paragraphs. The amounts of judgment, knowledge, experience and skill required were the basis for determining the amount as well as the ability level of supervision required by the process.

The sum total of planning, control coordination and problem solving requirements for all five phases determined the number and levels of supervision required to manage the operations of the two mills.

Summary

The preceding briefly summarizes two of the larger projects that have contributed to significant reductions in manufacturing costs. There have been a number of other completed projects that have been assigned to industrial engineering. Such projects as relayout of the Simplex set-up box plant, capability studies on laminating equipment, manpower utilization studies, waste paper and pulp storage and handling studies, all have led to increased productivity of manpower and machines and to more effective utilization of plant facilities.

In the non-manufacturing areas the engineers have contributed to policy development on the handling of major management programs, development of a job cost system for laminated products and in the development of short and long range planning techniques.



Mill Superintendents Discuss Felt Problems at Round-Table

Panelists at Albany Felt Co. meeting concur that trouble–free operation is more important than long felt life.

One of the highlights of a recent meeting held at the Albany Felt Co. main plant in Albany, N. Y., was a superintendents round table discussion on the important aspects of felt operation in relation to daily production. Among the visiting participants, who represented a variety of paper and paperboard mills, there was wholehearted agreement that trouble-free felt operation is more important than felt life. The latter is important, but only insofar as maximum production is maintained.

Felt Life vs. Trouble-free Operation

These two characteristics of a felt are not always compatible, however, as was indicated by a superintendent of a large fourdrinier mill making bleached kraft grades. He pointed out that more than 75 percent of the felts taken off their machines during the last 2 years had been removed because they were completely filled up—not because they were worn out. He attributed these filling up difficulties to a sharp increase in the use of additives. During the past 2-3 years, on one machine alone, the additives used had been increased more than 100 percent, while on another they had been increased 125 percent.

One means of counteracting this condition, he said, was to run cleaning compounds such as "Feltex" or "Potentol" through their Vickery conditioners. The results have been very encouraging. This solution is mixed in a 55-gallon drum heated to 130°-140°F and pumped through a strainer directly into the Vickery conditioners. They are able to do this while still making paper. This "washing-on-the-fly" technique also has been used to good advantage at other mills.

One superintendent suggested that when additives are used in the stock preparations, a suction box can be even more advantageous than the standard Vickery conditioner because of its continuous full width cleansing action. This, of course, is most effective when the suction box is located on the face of the felt, shortly after the felt leaves the sheet.

It should be used with a shower of moderate pressure on the inside of the felt and directed at right angles to the direction of felt travel. This permits the suction box to do a more efficient job by forcing as much dirt as possible to the surface of the felt.

Quick Startups Important

The importance of the pickup and wet felts on fourdrinier-Yankee machines enabling the machine to get up to speed in the shortest possible time was graphically illustrated by the superintendent of a tissue mill. He mentioned that he was not nearly so concerned about felt life as he was with the ability of his pickup and wet felts to provide a quick transfer of the sheet and good water removal qualities, respectively.

In this connection, he pointed out that he would definitely not recommend putting on a new pickup felt when the wet felt was over a week old because the wet felt would become too hard and dense by that time and would not permit the pickup felt to transfer the sheet properly.

Here again, it was emphasized that the few cents gained in keeping a wet felt on an additional few days would be drastically off-set by lost production when the sheet tended to follow the wet felt rather than stay with the pickup felt.

He also indicated in his mill they found that by using hot instead of cold water on the pickup felts, they had been able to run 100 to 200 feet per minute faster, because the lower viscosity of the hot water resulted in better drainage at the wet end. Unfortunately, hot water seriously reduced doctor blade life and eventually they had to discontinue its use.

Blowing

Another serious hindrance to maximum daily production, which can be affected by felt operation, is blowing —the result of trapped air between the felt and sheet of paper. Certainly proper felt design can alleviate this problem, but it was agreed that in many cases only a modification of the machine hookup could overcome the difficulty.

Lead rolls situated at the proper angle and suction pressure rolls also have been very helpful in minimizing the effect of blowing. It was the consensus that blowing difficulties can be minimized best by keeping the felt as tight to the sheet as possible. Lead rolls are certainly helpful in this connection.

Finish Versus Drainage

The age-old enigma of getting maximum finish from a felt and at the same time obtaining satisfactory drainage was also discussed. As one superintendent put it, "Now that the coating process is being expanded to include fully bleached grades of heavyweight paperboard, we expect greater demands will be put on the design, research and development departments of felt manufacturers to provide the industry with a felt that resembles a piece of glass, yet still can perform its prime function of removing water from the sheet or board."

Because of the demand for high

finish, heavyweight papers and paperboard, this problem is becoming increasingly complex day by day. Where laminating has taken care of high finish requirements for the last 10-20 years, a method is now being sought to eliminate this expensive, off-machine operation. If it can be avoided by a one-step operation, the paperboard manufacturer will be far ahead. Now, more than ever before, this has placed added responsibility on felt manufacturers to provide better top, bottom and press felts for multi-cylinder machines.

A superintendent of a multi-cylinder board mill expressed the opinion that top and bottom felts affect the finish more than press felts. He explained that it is extremely difficult, if not impossible, to remove objectionable marks in the press section left by the top and bottom felts, no matter how fine the press felts may be.

Mill superintendants discuss felt problems.

Finish Problems: Shadow Marking

A kraft mill superintendent outlined an interesting theory in connection with shadow marking that caused considerable controversy. It was his opinion that shadow marking was caused by the suction couch roll rather than by the suction press rolls of the first or second press.

Other superintendents expressed the belief that shadow marking usually could be traced to the suction rolls of the presses. This can often be minimized by a change in felt design, such as going to a finer, more bulky felt. This gives the sheet more cushion against the effect of the suction holes.

A superintendent of a board mill mentioned that he had alleviated shadow marking by reducing the vacuum in the bottom roll of the second press. Ironically, this not only helped the marking problem, but also seemed to result in the felts running drier than previously.

An Albany Felt Co. designer pointed out the problem of shadow marking was considerably more complex than it appeared on the surface. He cited a case that tended to substantiate the theory of the kraft mill superintendent that shadow marking was caused primarily by the suction couch roll. At a fourdrinier mill making fine papers, which he knew about, a very serious shadow marking problem was encountered. Mill personnel were unable to determine whether the marks were caused by the first or second press or both. Evidence of shadow marking was observed as the sheet came out of the first press, so, to minimize this, the vacuum was shut off on that press. The shadow marking persisted, however. Since it was also seen after the second press, the vacuum was also shut off there, but this didn't help either.

Drilled Area vs. Land Area

Certainly in that instance the answer could have been the suction couch roll. On the other hand, this phenomenon also could have been explained by the difference between the water removal in the drilled area of the suction press rolls and the "land" or unperforated area in each roll, which would still be present even though the vacuum had been shut off in both presses.

Stated another way, it was generally agreed that the amount of vacuum in a suction press roll alone was not necessarily the prime factor in shadow marking. Rather, it is the result of two different forces (drilled area vs "land" area) acting on the sheet at the same time and one being unable to extract as much water as the other.

The superintendent of the fourdrinier - Yankee mill explained that he counteracted these differential forces by using softer rubber covered press rolls and increasing the number of holes in them in order to reduce this differential of the two forces being applied on the sheet.

If these modifications are not possible, shadow marking can also be minimized by having enough plain presses (with adequate pressure) after the suction presses to iron out these marks.

One superintendent suggested the use of rubber covered suction couch rolls. One drawback to their use was pointed out by the kraft mill superintendent. He had had a very bad experience with rubber covered suction couch rolls because a faulty strainer allowed foreign matter, such as sand and minute rocks, to get into the system. The rubber covering subsequently picked up this material and wire life was drastically reduced.

Improving Felt Operation

Efficient mechanical conditioners can certainly help improve felt operation and thus contribute to increased daily production. The superintendent of a paper board mill reported that he had experienced excellent results using Vickery felt conditioners on his press felts and a suction box with a $\frac{7}{8}$ inch slot with Monel rods on their bottom felts. He further reported that the suction box is augmented by a single Mt. Hope roll followed by a warm water shower. This is a low pressure shower—about 10 p.s.i.

On another of their machines, he said a single Mt. Hope roll on both the top and bottom felts was doing a very good job in keeping the felts open, thus enabling them to obtain greater daily production. He added that their constant efforts to get better finish had further complicated the problem of keeping his top and bottom felts clean, because of the increasing number of additives used in their stock. The conditioning arrangements he had outlined had minimized these difficulties, however.

In connection with keeping felts clean, there was considerable discussion about the effectiveness of the standard Vickery conditioner as compared to the stationary suction box.

Several superintendents indicated they preferred the flat suction box, located on the face of the felt, preceded by a warm water shower (130°F), to the cyclical method of cleaning, which might clean the felt only every 15 to 25 revolutions, depending on the design of the equipment and the speed of the machine.

A superintendent of a Yankee fourdrinier mill pointed out he had obtained good results by supplementing the cleaning action of the suction box on his bottom felts with wringer rolls, in order to reduce still further the amount of water going into the press.

Several superintendents declared that in addition to increased production, they derive a special "fringe benefit" through improved felt washing methods and by keeping the felts cleaner. This was the possibility of the felt manufacturer making special modifications within the basic felt design to augment the efforts of the paper mill superintendent to obtain maximum water removal and production. Put another way, with an effective washing program and the cooperation of the paper mill superintendent, the felt manufacturer can build into the felt special design characteristics that usually result in a very definite improvement in overall felt performance.

One opinion expressed was that shadow marking is caused by the suction couch roll rather than by the suction press rolls of the first or second press.

Maintenance Program Essential

The importance of a good maintenance program was brought out by a superintendent of a multi-cylinder board mill. He emphasized the importance of keeping the press rolls in top condition through constant checking and regrinding, if necessary. In fact, he indicated that they grind their press rolls on a regular three month schedule or more often if needed. In his mill, he declared, they had spare press rolls available so that press roll changes could be synchronized with wire changes in order to minimize interruptions in the production schedule.

Summary

A great deal was gained from this meeting that was of considerable mutual benefit. Probably the most important was a better knowledge of the relationship between felt operation and obtaining maximum daily production on the paper machine. It also emphasized some of the more important factors in connection with mechanical conditioners, felt washing procedures and maintenance programs through which both the felt manufacturer and the paper maker can reach their common objective — producing more salable tons per day.

PJT NEW LITERATURE

Yarway Differential Pressure Transmitter

Describes applications, operation, construction details, advantages and operating specifications of this new transmitter. Bulletin WG-1824, Supplement A. Yarnall-Waring Co., Chestnut Hill, Philadelphia 18, Pa.

Honeywell Index of Literature

Lists industrial and valve division literature. Also contains an alphabetical subject-company index of instrumentation magazine articles. In addition educational aids and other services and literature are described. Bulletin G2-1a. Minneapolis-Honeywell Regulator Co., Wayne & Windrim Aves., Philadelphia 44, Pa.

Label Gluers

Describes these ungummed label gluers which are designed to speed up and add efficiency to labeling and shipping room procedures. Brochure. Glue-Fast Equipment Co., Inc., 10 White St., New York 13, N. Y.

pH Control System

Product specification E67-5 covers pH transmitters; E67-5 pH electrodes and E12-4 Bailey DC recorder. Charts, tables and drawings are used to aid in the proper selection according to application. Bailey Meter Co., 1050 Ivanhoe Rd., Cleveland 10, Ohio.

Pfaudler Permutit Equipment

Outlines the equipment for treating industrial wastes and highlights not only the equipment but engineering services and complete waste treatment systems they offer. Bulletin 4486. Permutit Co., 50 W. 44th St., New York 36, N. Y.

Piloted Pressure Regulator

Contains illustrated sales copy of this pilot-operated pressure reducing valve for steam, water, oil, gas, air, and chemicals. Bulletin JNP-1 OPW-Jordan, 6013 Wiehe Rd., Cincinnati 13, Ohio.

Reliance Motor Selector

Gives concise selection data to users of a-c motors from one through 200 h.p. Also includes brief explanations of NEMA design classes, speed frequency relationship, current and torque values, as well as frame selection tables and complete dimension information for standard frames and mechanical modifications for all frame sizes from 182 through 6085. Bulletin B-2103-4. Reliance Electric & Engineering Co., 24701 Euclid Ave., Cleveland 17, Ohio.

Ross Instantaneous Heaters

Presents these heaters which have exclusive, extra-large steam inlet area. Also describes principal features and includes selection tables, charts and piping diagrams. Bulletin 304.4K1. American-Standard, Industrial Division, Detroit 32, Mich.

Reeves Variable Speed Drives

Describes complete line which provide precise, infinitely adjustable output speeds from a constant r.p.m. motor source operating from standard in-plan a-c circuits. Also includes mechanical construction features, condensed drive specifications, available speed variations and accessories. Bulletin G-5812 Reeves Pulley Co., Div. Reliance Electric & Engineering Co., Columbus, Ind.

Tejax Jetsteam

Provides illustrated sales copy on this instantaneous electric steam generator for process, cleaning and heating steam uses. Tejax Engineering Corp., 180 Weeden St., P. O. Box 348, Pawtucket, R. I.

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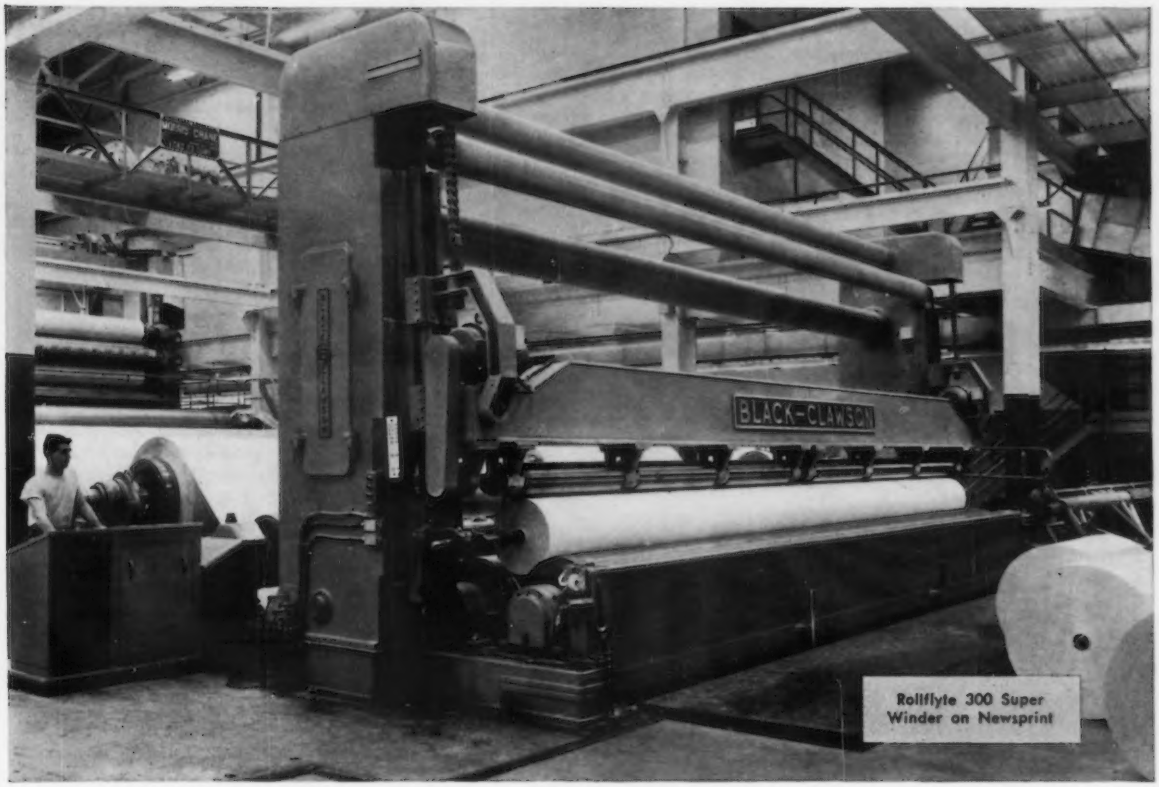
Contains complete specifications along with design and operating characteristics of the Triplex Mast. 6p Bulletin. 8p brochure provides complete specifications, operating data and accessory information on the Yale air hoists. Yale & Towne Mfg. Co., 11,000 Roosevelt Blvd., Philadelphia 15, Pa.



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Chemical Engineering Group
The Institute of Paper Chemistry
Appleton, Wisconsin

The 1959 mood of the technical man in process industry seems to be "Show me!" as far as computers are concerned. The newness of these devices has rather worn off and automatic computers stand in the light of expensive equipment competing with much other equipment for management's dollar. If automatic data-processing equipment has major utility in reducing costs and in improving productivity and product quality—well and good; if not, there are tried and true ways of spending money to accomplish these ends.

The news of 1959 is that there *are* applications to be shown. Papers presented at the Annual Meeting of TAPPI just past and at the Annual Meeting of A.I.Ch.E. in December are to the point:

Presentations at TAPPI

Charles Carroll, graduate student at The Institute of Paper Chemistry, presented a progress report on his mathematic evaluation of a complete kraft pulping cycle at the TAPPI Chemical Engineering Committee technical session. His analysis is aimed at determining the most effective (most profitable) design and operating conditions of the process. Mr. Carroll has shown that all the elements of the economic balance of a kraft pulp mill can be programmed for selection of "best conditions" using an IBM 650 computer. It is easy to extend from this work the implication that readjustments in operating conditions could be computed every day or every shift to keep a mill operating at its economic optimum.

Lowell Zabel of Kimberly-Clark Corp. discussed at the same TAPPI session an excellent example of how automatic computers aid production by speeding research and supplying precise design data. Kimberly-Clark needed to know how operating conditions and design variables affected the machine-direction temperature distribution at the surface of a Yankee dryer. Predictions of such data would have involved uneconomically lengthy calculations by hand, considering that a set of 25 simultaneous equations was involved. Using an analog computing system, Mr. Zabel was able to calculate the needed curves in a few days.

Also at this meeting, the writer of the present article reviewed the development of the fields of systems engineering and operations research, pointing out the importance of mathematical models and automatic computer technology to these rapidly-growing areas of technical work.

A.I.Ch.E. Discussed Computers

At the A.I.Ch.E. Annual Meeting, topics discussed included computer solutions to condenser design problems, the improvement of heat transfer calculations by use of computer programs, the determination of absorption tower flow rates and the analysis of staged processes using analog and digital computers. Perhaps more significant than these technical papers was the keynote of the meeting—the annual invited Institute Lecture—entitled "Mathematics for Optimization." It was delivered by Dr. Neal R. Amundson, Head of the Department of Chemical Engineering at the University of Minnesota, who is both chemical engineer and mathematician.

Small Computers—In and For Production

That computer work is widely found in chemical engineering research and design can be considered almost an old story by now. The new story is computers in production. In the first weeks of 1959, two large process companies (Monsanto and B. F. Goodrich Chemical Co.) announced firm plans to put computer-controlled plants on stream within the year. Discussions of the possibilities of such deveolpments have taken place for quite a few years; now the automatic chemical plant is virtually a reality. It is the advent of the small digital computer which has brought this about.

The prospects for the paper industry for 1959 do not include a computer-controlled paper machine but do show promise for more computer assistance to the technical man in research and production. The biggest factor in this development is likewise the ready availability of small but versatile analog and digital computers at relatively modest cost. The IBM 610 and the Royal McBee LGP-30 are leading devices in this field, which also includes products of the Bendix and Burroughs organizations.

Royal-McBee Digital Computer Uses Magnetic Drum

One widely used model of the desk-side digital computer is the LGP-30, marketed by Royal-McBee Corp. This device operates on instructions and data stored in an internal magnetic drum memory with a capacity of 4096 words. Data and program instructions may be entered from the electric typewriter and results automatically read out by the same device. For repeated calculations involving much data, however, a great deal of time is saved by reading-in data and programs with an auxiliary high-speed paper tape reader. High-speed data output is also in tape form.

New IBM Desk-Side Digital Computer

A comparative newcomer in the desk-side digital computer field is the IBM 610. This machine features automatic positioning of the decimal point and simplified control-panel operation. Program information and data are stored in separate reels of punched paper tape. Results may be printed out directly on the electric typewriter or punched on paper tape. Such a machine is shortly to be installed at The Institute of Paper Chemistry.

These machines help the production man in two ways: First, on-site digital computer facilities speed statistical quality control, enable closer correspondence of test results with operating sequences, and usually result in closer control limits. Second, analog computing devices help greatly in solving vexing process control problems.

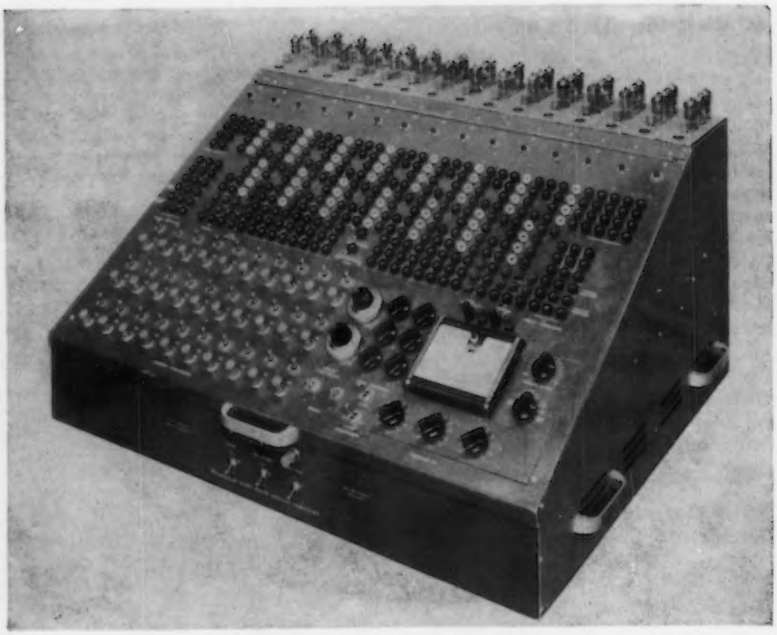
Solves Process Control Problem

Small analog devices such as the fully "do-it-yourself" Heath, the modular plug-in unit Philbrick, and the completely assembled Donner computers can be very helpful in process control problems. One mill which has a small analog computer in its instrumentation lab has found the computer invaluable for solving problems such as what to do with a controlled stock level system which was never in control. In this specific case, a few hours' work on the computer indicated that a much broader proportional band than that found in conventional controllers would do the job. A special unit was fabricated

and adjusted as indicated by the computer results and found to work in the mill as predicted.

In quality control work, on-site high-speed computation has two advantages: First, feed-back of information is speeded so that an out-of-control condition may be corrected with less or no broke and spoilage, and second, feed forward of information to subsequent units is speeded, permitting timely adjustment to upsets in quality of intermediate products.

An example of the usefulness of the latter function may be found in an integrated publication paper mill manufacturing chemical pulps and groundwood for captive use. In one such mill, variations in the wood supply as delivered to the pulp mills and grinder rooms are significant and not well controlled. These raw material variations cause operating and product quality variations in all units down the line to the final coating operation. There is a strong possibility of organizing the flow of wood in such a way that a computer routine could be employed to pinpoint operating changes in advance. Such computer assistance to operations would eliminate much of the present production troubles due to process material variations.



Heath Desk Top Analog Computer

Representative of inexpensive desk-top analog computers is the above device marketed in kit form by the Heath Co., Benton Harbor, Michigan. Arrayed across the top of the cabinet are the fifteen operational amplifiers which can perform the functions of addition, integration, or sign inversion. These are connected with the thirty coefficient-setting potentiometers on the lower left and with other computing elements through patch cords plugged into the jacks in the central patch-bay. The variety of combinations thus obtained permits electronic simulation of various simple processes and their associated control mechanisms. This analog computer is in use at The Institute of Paper Chemistry.

Other Paper Applications

Information on paper industry applications of computers is still relatively scarce. In addition to the applications just discussed and those operations research problems cited by Wolfe in a recent issue of *Paper Trade Journal* (1), the following computer programs can be said to be in various stages of development. In some cases, the development may already be in the operations stage, but in others has gone no further than preliminary thinking.

Woodlands and Forestry: Statistical studies of seed germination and genetic experiments, rate of timber increase in various areas, analysis of insect mortality rates according to season, location, age, etc. Also, setting up of optimum selective cutting schedules, allotment of areas to cutting crews, control of wood flow to yard.

Pulp Mill. Calculation of best species blend for desired pulp properties, optimization of pulping and bleaching schedules, determination of stone burring needs and schedules, checking of balance of recovery cycle operations.

Paper Mill. Furnish formulation control, water balance computation, prediction of refining requirements, interpretation of quality-control test results, control of conversion, coating-color formulation.

While fully automatic operation (or "computer control") of the complex processes in the paper industry is not just around the corner, yet in various research laboratories across the country computers themselves are speeding the day when this achievement may be realized.

Published Information

Computer applications are discussed in general terms in "Handbook of Automation, Computation and Control" by Grabbe, Ramo and Wooldridge (2). Computing control of a batch chemical process is described by Eckman and Lefkowitz (3). The operation of a small digital computer, the IBM 610, is covered in a paper by Lentz (4), while the application of the Royal-McBee LGP-30 to the problems of engineering design have been presented by Brender and Weyand (5). In almost every issue now, the trade magazines of the electronics and instruments industry discuss new computer applications, some of which bear relevance to the paper industry.

Summary

In summary, therefore, a realistic 1959 view shows real opportunities for the small technical computer in the paper industry. The immediate applications are as an aid to research into fundamentals of materials and processes, as a reliever of burdens in evaluation and quality control work, and as a highly efficient "hand" in design and formulation calculations.

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3. Eckman, D. P., and Lefkowitz, I., **Control Eng.** 4, no. 9: 197-204 (Sept., 1957).
4. Lentz, J. J., **IBM J. of Research and Development** 2, no. 1: 72-83 (Jan., 1958).
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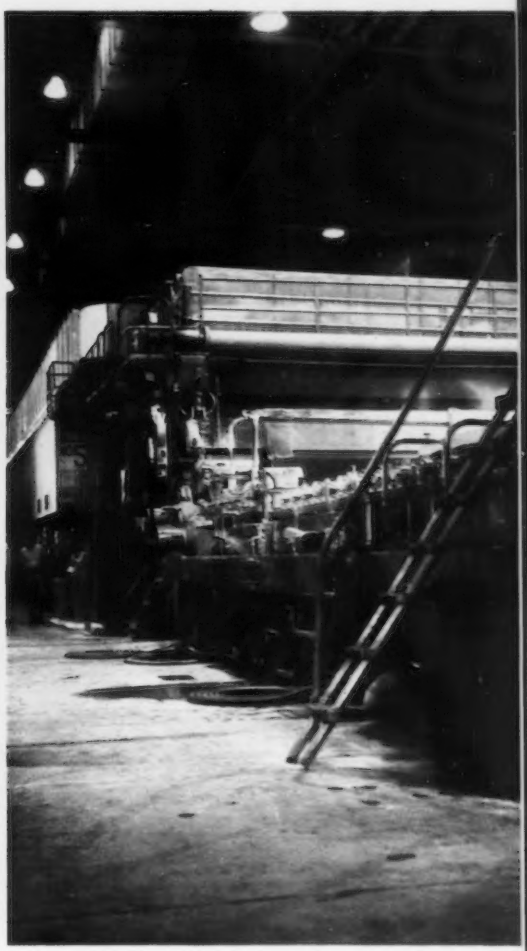
DRAMATIC MOMENTS IN PAPER-MAKING PROGRESS



Completely new or completely rebuilt, the first production run on a paper-making machine is an exciting event to everyone concerned. To Fraser Paper, Ltd., owner of this rebuilt Fourdrinier machine, the speed of its first run (1500 f.p.m.) and its faultless operation are deeply satisfying.

To Pusey and Jones of Wilmington, Delaware, who did the work, the event is no less important. A completely new Fourdrinier with 228-inch-wide wire 100 feet long was installed, after pre-assembly at the Pusey and Jones plant. A vacuum pickup and an after-dryer section with completely enclosed gearing were added. The entire machine, from headbox to reel, was carefully inspected and parts replaced whenever necessary.

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Right, Above: *Overall view of 2000 f.p.m. machine which was completely rebuilt by Pusey and Jones for Fraser Paper, Ltd.*

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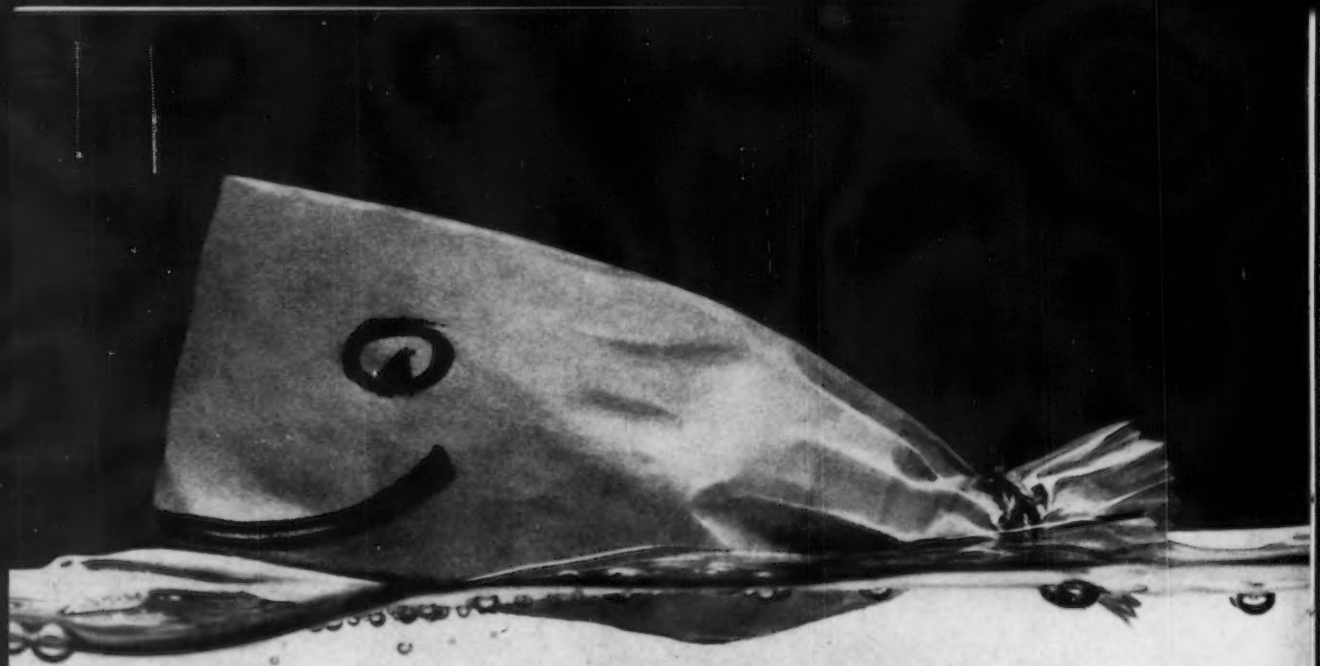

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Paper Industry is Moving Into A New High

Presenting Mr. Dobrow's annual article which for many years we have been privileged to publish at "Convention Time." As usual the author casts his experienced eye over the past year and gives us pertinent comments on the future.

Morris C. Dobrow,

Executive Secretary,
Writing Paper Manufacturers Ass'n.

The paper industry in 1958 showed a good example of strength in the face of adversity. Despite the general business recession, overall production of paper and paperboard in 1958 was slightly higher than in 1957 and only two per cent below the record year of 1956.

The situation today is much better than it was a year ago. It probably is better than we dared to hope it would be a year ago. The sharp but short recession of 1958 is well behind us. There is optimism throughout the land.

Recovery began in May and the progress of the last 10 months has brought the level of industrial production up to within two per cent of the top of the 1955-57 boom. The gross national product, disposable income and consumer expenditures already have exceeded the highs of the previous boom.

The recovery is wide-spread and soundly based. The recovery can proceed for a long while if excesses are avoided and the problems of the nation are judiciously handled.

General Outlook

Four clouds loom ahead on the 1959 business horizon.

1 The international political situation is always first. We have heard of Russia's brash ultimatum on Berlin and the strong reply by our government and our allies. There will be a lot of jockeying in the months ahead. The cold war will continue and we hope that the tensions can be properly contained.

2 Perhaps the most serious cloud on the horizon for 1959 is the threat of large industry-wide strikes this summer, as unions press for stiff wage increases. All eyes will be turned to the wage negotiations in the steel industry at mid-year.

3 Another cloud on the horizon is inflation. So far, the fear of inflation has found expression primarily in the equity markets, without seriously affecting other sectors of the economy.

The Author

The yield on bonds is now greater than on stocks and the yield on stocks, by any historic precedent, is at dangerously low levels.

Many of the new members of Congress are committed to proposals that would greatly increase the expenditures of our government. Many of the so-called "liberals" act as if they believe that the way to end inflation is by inflating some more.

Our government will be having a deficit of about $12 billion in the fiscal year ending next June 30th. The President's proposal is to cut the expenditures from $80 billion to about $77 billion in the new fiscal year.

The Administration also expects that the business recovery will be so extensive as to provide for enough corporate profits so that their tax payments will make it possible to balance the budget in the fiscal year ending in June 1960. If this is done, perhaps the inflationary forces can be kept in check in 1959. If it is not done, if the government's expenditures continue to soar and if a substantial deficit is indicated for the following fiscal year, there may be a further deterioration in the world's confidence in the American dollar, which might conceivably, within a year or so, cause a run on our gold supply and force devaluation of the

dollar at some later date. That would simply be piling a new inflation on top of the one we have had in the post-war period.

The Western European countries apparently have stabilized their currencies and the prices of commodities. Any further wage-price increase in our commodities is likely to price us out of the market. We have already seen the glaring example in the case of automobiles, where our exports have dropped sharply and our imports of low-priced cars have soared spectacularly.

4 If further inflation, whether from excessive governmental expenditures, or from the wage-price push develops, we may be sure that the Federal Reserve Board will not stand idly by. It will go from the present policy of mild restraint of credit to a policy of harsh restraint of credit to overcome these inflationary forces. In doing so, however, it could, within a short time, end the recovery and boom which are now developing.

As we complete the first two months of 1959, it is evident that nearly all major segments of the U. S. economy will be moving upward. The major areas of national output will rise from 1958 to 1959 by approximately the following amounts.

Gross National Product will rise from an average of $436 billion in 1958 to about $470 billion in 1959

Consumer buying—up $16 billion

Inventory cycle—reversed from a $5 billion liquidation to a $3 billion accumulation

Business capital expenditures—up $2 billion

Federal Reserve Board Index: (1947-1949=100)

1957—average of 143

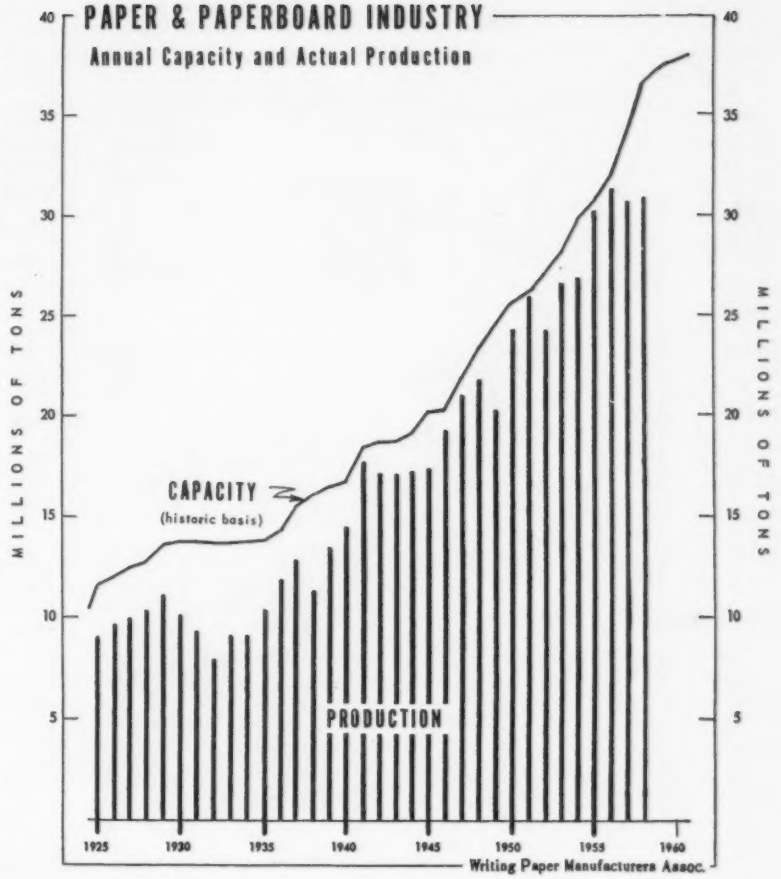
1958—average of 134

1959—should exceed the *1957* high by a small amount

The Federal Reserve Board Index measures in physical terms, not dollars, the output of factories and mines. It does not include the service industries.

The recovery in both the durable and non-durable goods industries has been strong and vigorous since the bottom of the recession in April. For 1958 as a whole, the Federal Reserve Board Index averaged 134 which was six per cent under 1957. The loss was entirely in the durable goods industries which declined eleven per cent.

The non-durable or soft goods industries' average for 1958 was the same as in 1957. However, it should be noted that this sector of the economy made a new high record in each of the last 5 months of 1958. It accounts for the increased demand on the paper industry, particularly the packaging papers and boards.



Paper and Board Production

The preliminary figure for production of paper and paperboard in the U. S. in 1958 is slightly higher than it was in 1957—30.8 million tons versus 30.7 million tons. Paper production was about the same; board was up 1 per cent.

The 1958 output of 30.8 million tons was two per cent less than in 1956, the previous record year.

In the fourth quarter of 1958, the paperboard industry made a new all-time high. In 1959, the paper and board industries are each expected to make new high records, exceeding their 1956 highs.

In 1959, production should be something like 32 to 32.5 million tons.

Nothing much would be wrong with these figures if it were not for the fact that the capacity of the industry in 1957 was six per cent higher than in 1956. An additional six per cent was added to capacity in 1958 and still another additional two per cent is expected to be "on stream" in 1959. Thus the production figures, translated into operating ratios, based on a 6-day capacity, are as follows:

1956	97%
1957	88%
1958	84%
1959 (Est.)	87%

Capacity Survey

Table I shows a summary of completed and projected increases in industry capacity:

In captioning these capacity figures as the "historic basis," reference is made to the basis defined in the 1957 release by the Department of Commerce on the paper industry's capacity. This measured capacity in the paper industry on the basis of a 6-day operation for all mills, except newsprint which used an average of 348 operating days and paperboard which used an average of 313 operating days.

However, it is well known that in some areas where custom, demand and adequate supplies of raw ma-

TABLE I—CAPACITY SURVEY

Historic Basis

End of Year	Total *Paper* Capacity (Tons)	Total *Board* Capacity (Tons)	Total-Paper and Board Capacity (Tons)
1957	15,746,000	19,040,000	34,786,000
1958	16,890,000	19,803,000	36,693,000
1959	17,389,000	20,055,000	37,444,000
1960	17,568,000	20,202,000	37,770,000
1961	17,707,000	20.202,000	37,909,000

terial and labor permit, actual production is on a six to seven-day basis and capacity is accordingly higher for such machines.

For the industry as a whole, projected additions to capacity have declined sharply—but the additions to come "on stream" in the next three years in the fine and printing paper segments of the industry are relatively high.

Fine Papers

Fine paper production in 1958 was four per cent more than in 1957 and close to the peak of 1956. The tonnage shipped from mills, however, was about the same in 1958 as in 1957, mills having increased their inventories of finished paper.

There was a normal seasonal recovery in the fall of 1958, such as was not witnessed in the fall of 1956 or in the fall of 1957. Since the beginning of 1959, there has been a substantial seasonal increase in demand which has resulted in an increased backlog of orders of several days.

With capacity of the fine paper industry in 1958 at 1,703,000 tons and actual production at 1,568,000 tons, this segment of the industry had average operations at 92 per cent, measured on a 6-day basis. The projected capacity for 1959 is 1,800,000 tons. If demand and production rise by five per cent, as now is estimated, the operating ratio for 1959 will again be 92 per cent.

Printing Papers

Printing paper production in 1958 at 4,031,000 tons was slightly less than the 4,052,000 tons produced in 1957 and six per cent below the 1956 peak. In 1958, the printing paper industry operated at 90 per cent of capacity.

At the beginning of 1958, the printing paper capacity was 4,322,000 tons. Additions during 1958 amounted to 138,000 tons. Further expected increases to come in are as follows:

In 1959	187,000 tons
1960	104,000 "
1961	93,000 "

The demand for printing papers did not fully recover with the general business improvement in the second half of 1958. About half of the end use of the printing paper tonnage is in the field of periodicals and publications. Magazines, as well as newspapers, had a substantial decline in advertising lineage during 1958.

Newspaper lineage declined 5.5%
Magazine lineage declined 9.4%

Expenditures for direct-by-mail advertising, on a dollar basis, increased 7.1 per cent during the year, but a small part of this was due to the increased cost of postage.

UNITED STATES CAPACITY AND PRODUCTION BY GRADES

Historic Basis

GRADE	1955			1956			1957			1958 Preliminary		
	END OF YEAR CAPACITY	ACTUAL PRODUCTION	%	END OF YEAR CAPACITY	ACTUAL PRODUCTION	%	END OF YEAR CAPACITY	ACTUAL PRODUCTION	%	END OF YEAR CAPACITY	ACTUAL PRODUCTION	%
Newsprint	1,570,000	1,459,017	93	1,721,000	1,620,146	94	2,000,000	1,797,165	90	2,486,000	1,723,000	69
Printing Papers	3,900,000	3,937,795	101	4,059,000	4,304,013	106	4,322,000	4,051,595	94	4,460,000	4,031,000	90
Fine Papers	1,416,000	1,449,980	102	1,515,000	1,575,468	104	1,605,000	1,510,845	94	1,703,000	1,568,000	92
Coarse Wrapping & Packaging Papers	3,512,000	3,686,816	105	3,567,000	3,947,898	111	3,575,000	3,662,677	102	3,811,000	3,631,000	95
Special Industrial Papers	630,000	610,270	97	662,000	682,736	103	717,000	659,225	92	740,000	611,000	83
Tissue & Sanitary Papers	1,764,000	1,761,036	100	1,844,000	1,859,861	101	1,884,000	1,911,186	101	2,025,000	1,961,000	97
TOTAL	12,792,000	12,904,914	101	13,368,000	13,990,122	105	14,103,000	13,592,693	96	15,225,000	13,525,000	89
Paperboard & Wet Machine Board	14,693,000	14,045,286	96	15,534,000	14,380,662	93	16,910,000	14,194,113	84	17,630,000	14,293,000	81
TOTAL	27,485,000	26,950,200	98	28,902,000	28,370,784	98	31,013,000	27,786,806	90	32,855,000	27,818,000	85
Building Paper	1,641,000	1,597,954	97	1,643,000	1,428,395	87	1,643,000	1,327,906	81	1,665,000	1,349,000	81
Building Board	1,800,000	1,629,948	91	2,004,000	1,642,013	82	2,130,000	1,562,836	73	2,173,000	1,630,000	75
TOTAL INDUSTRY	30,926,000	30,178,102	98	32,549,000	31,441,192	97	34,786,000	30,677,548	88	36,693,000	30,797,000	84

NOTE: Historic Basis was defined in the 1957 release by the Department of Commerce on the paper industry's capacity. This measured capacity on the basis of a 6-day operation for all mills, except newsprint which was based on its operating schedule (348 days – industry average) and which used an average of 313 operating days for paperboard.

The Department of Commerce, in its Annual Survey of Outlook for Major Industries, indicates expected gains in 1959 over 1958 as follows:

Newspapers	+10%
Magazines	+ 7%
Commercial Printing	+ 7%

Population Will Be Important

The tremendous increase in our population since 1950 is one of the most dynamic factors in our economy. And there is no doubt about the continued growth in our population.

On July 1, 1940, the total population in the U. S. was 132 million; by July 1, 1950, ten years later, it had jumped to 152 million and, at the present time, the population is 175 million. By 1960, it is estimated that our population will be over 180 million. We are adding about 3 million people every year.

In connection with the recent increase in population, it is well to remember that many of the new members of our society are very young. However, the first war babies, born in 1940, are just beginning to reach the early ages of economic maturity and there will be a wave of them coming along each year from now on. They will have a powerful effect on increasing consumption of all types of goods in the 1960 decade.

Wood Pulp

In 1958, the U. S. pulp industry became more stabilized as demand improved in the latter part of the year. Production in 1958 was about the same as it was in 1957. The amount of captive pulp used in integrated mills was one per cent higher than in 1957.

Shipments of market pulp to domestic consumers declined by eight per cent and export shipments declined by 15 per cent. Imports were three per cent less than in 1957.

In 1956 the pulp industry in the U. S. operated at 97.3 per cent of practical capacity; in 1957, at 88.7 per cent; and in 1958, it operated at 83.4 per cent. Since pulp capacity increases in 1959 will be small, the industry should have a better operating ratio this year.

Summary

Business in general has almost fully recovered from the recession of 1958. Further improvement in the business picture in 1959 is confidently expected and new highs are indicated in all the various factors making up our economy. New highs also are indicated for paper production and consumption.

There will be prosperity, but an uneasy prosperity because of the fear of inflation from the Federal government's deficit spending and the wage-cost price push. There will also be the danger from without if there should be a lessening of world-wide confidence in the U. S. dollar and a possible run on the country's gold supply which might lead to devaluation and more serious inflation.

These things need not happen if there is an awareness of the problem and the dangers.

One of the great difficulties in fighting inflation is that most people believe, although they do not admit it, that a little bit of it is a good thing. But inflation is economically and morally wrong. It is a hidden tax on the holder of government bonds, on the holder of insurance policies, on the saver and on the pensioner.

The results of the election, the magnitude of the changes in the security markets and the frequency which inflation is being predicted in business and financial circles, are a warning that an increasing part of the American public is becoming inflation-minded. Here lies our greatest danger.

The attitude of the President and the Administration in the matter of inflation is well known. What position the new Congress will take, only time will tell. For the moment, it is fairly clear that recovery will proceed at a pretty good pace unless arrested by severe credit restraining policies by the Federal Reserve Board. It is determined to fight inflation.

The outcome of the struggle between the President and Congress in the coming year may well be the largest factor in determining the course of our economy in the next decade. Will we follow the inflationary path of France which, in a period of 45 years, reduced the value of its currency by 99 per cent, or will we preserve the integrity of the dollar—even the 50 cent dollar we have today—as our fathers did at the turn of the century, when they rejected William Jennings Bryan's inflationary silver scheme.

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How Hot Water Is Produced Economically
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Further Travel of Your Roving Editor in Europe
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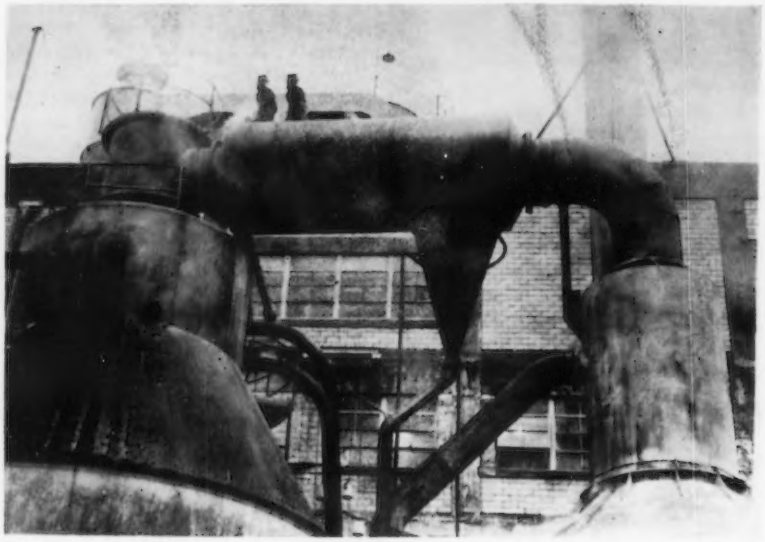
Norwegian Mill Marks 100th Year
Air Jet Coater on Riegel's Carolina Belle is One of the Largest Installed

How East Texas Gets Cleaner Digester Blow Condensate

A special separator on the digester blow tank at East Texas Pulp & Paper Co., Evadale, Tex., is used to clean the vapors during a blow so that clean condensate is provided and heat exchanger fouling is greatly reduced. This unit, called "Centrifix C. D. Purifier," is manufactured by the Centrifix Corp. of Cleveland.

Previous to the installation of this equipment, considerable "black liquor" and pulp were entrained in the vapor from the digester blow tank. This caused the condensate to be almost totally black in color. Most serious, however, was the heat exchanger plugging. Since the Purifier has been installed, the condensate is nearly clear and exchanger plugging decreased by 80 per cent.

Designed to remove entrainment of pulp and liquid equivalent to 250 lbs. per hour, the Centrifix CD Purifier operates at a flow of 160,000 lbs. of steam per hour at 1 p.s.i.g. with a pressure drop of only 1.23 inches of water. Featuring a helicoid tuyere, it removes the pulp and other impurities in the blow vapor by centrifugal action. Since it has no filters and no moving parts, no maintenance has beeen required on the purifier in its more than two years' operation, according to East Texas management.



Centrifix CD Purifier installed between the top of the digester blow tank and hot water accumulator at East Texas Pulp and Paper Co. has reduced heat exchanger plugging by 80 per cent.

How it Works

As the blow-off vapor enters the purifier, two one-inch jets spray water into the vapor to force knots and shives to the sides of the purifier vessel. From here, they move by gravity into a hopper where a sparge ring feeds additional water into the chute to drain the materials down into the drainage pans. Here the liquor is separated from the pulp.

The lighter vapor enters into a series of tangential slots in the drying tuyere. These slots impart a rotary motion that throws off any fibers carried over from the scrubbing spray. These contaminants are forced against the inner wall and then move down into the hopper. Large particles of entrained material in the incoming vapor blow past the tuyere and move through the by-pass area to the rear chamber of the purifier vessel where such particles fall into the hopper. The vane blades on the outlet tube increase the efficiency by preventing any re-entrainment.

Equipment Design

The outer diameter of this Centrifix Purifier is 6 ft. 11″, with an overall length of 19 ft. 3″ and 48″-diameter inlet and outlet openings. The hopper has an outer diameter of 60½″ at its top, an 8″ diameter opening at its base and an overall length of 12 ft. 8″.

While the entire unit weighs over 8500 pounds, it is almost self-supported between the digester and the blow tank. The unit was installed during the holiday shutdown over the July 4th weekend in 1956. The only field assembly required was welding the hopper to the purifier vessel which was shipped as a complete unit.

The unit's combination of a liquid separator and dry purifier is functioning at its original efficiency after more than two years' operation without any maintenance states East Texas. While no immediate need for overhaul or repair is foreseen, easy entry into the vessel has been provided through two 11 x 15″ elliptical manholes, one at each end of the vessel.

GRASSELLI

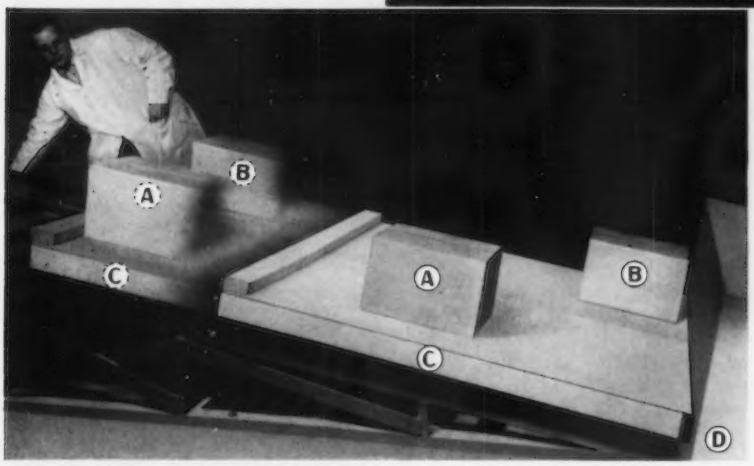
DU PONT

REG. U.S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

chemical briefs

FOR THE PAPER INDUSTRY



SLIP RESISTANCE of boxboard containers is measured by Conbur Impact Tester which simulates impacts received by packages during shipping. Carton treated with "Ludox" (A) is placed on treated kraft paper, which covers one half the surface of the sliding inclined plane (C). Untreated carton (B) is placed on untreated kraft paper. The inclined plane is released, striking stop (D) with an impact equivalent to a dead stop at 6 mph. Repeated tests show treated cartons slide only ⅓ as far as untreated cartons.

DU PONT ENGINEERING TESTS PROVE . . .

Anti-slip coatings of Du Pont LUDOX® reduce slippage of corrugated cartons by 67%

Losses due to damage in handling and shipping greatly reduced

Invisible coatings of Du Pont "Ludox" colloidal silica on corrugated cartons can mean the difference between safe shipment and costly damage. Using the Conbur Impact Tester (above) the Du Pont Engineering Test Center simulated impacts received by packaged products during shipping. Result: Cartons treated with "Ludox" slip 60 to 70% less than untreated containers!

This fact is important since Du Pont experience shows that 75% of all damage to one-trip fiberboard cartons results from impacts received during coupling and normal starts and stops in rail shipment.

What this means to package users

There's less damage to packaged products because of (1) reduced movement of treated packages in rail and truck shipment, and (2) greater stability of carton loads during in-plant handling. Treated packages stack solidly with less danger to personnel. And the expense of repackaging due to damage is reduced.

Coatings of "Ludox" can be applied to finished packages or to paper products by mills or converters. Treated packages resist soiling, permit sharper printing . . . increasing customer appeal of finished packages.

Names of suppliers of treated packages and more information about "Ludox" are available on request. Just fill out and mail coupon below.

New Du Pont program offers tailor-made adhesives for paper laminates

When special adhesives are needed for strong paper-to-paper bonds, or where equipment calls for particular formulations . . . chances are Du Pont can tailor-make a Weatherproof Adhesive to fill the bill.

Manufacturers of laminated paper products are invited to take advantage of special Du Pont facilities which are available for solving adhesive problems and for compounding adhesives suited to difficult product requirements. The coupon will bring further information.

CHEMICALS BASIC TO THE PAPER INDUSTRY

In addition to a group of specialty chemicals that offer unique benefits to end products, the Du Pont Grasselli Chemicals Department also supplies the following basic chemicals to the pulp and paper industry:

Aluminum Chloride Solution	Reagent Acids and Ammonia
Aluminum Sulfate	Salt Cake
Ammonium Sulfamate	Sodium Carbonate
Aqua Ammonia	Sodium Phosphate – DI
Caustic Soda	Sodium Tripolyphosphate
Copper Sulfate	Sodium Pyrophosphate
Diatomaceous Earth	Sodium Silicate
"Lignasan" X Fungicide	Sodium Sulfite
	Sodium Thiosulfate
Mineral Adhesive Solution	Sulfamic Acid
	Zinc Chloride

MAIL COUPON for your copy of "Chemicals for the Pulp and Paper Industry," which describes the benefits made possible by Du Pont Chemicals. Perhaps you'll find new ways to improve product quality, build sales appeal. E. I. du Pont de Nemours & Co. (Inc.), Grasselli Chemicals Department, Room N-2543, Wilmington 98, Delaware.

E. I. du Pont de Nemours & Co. (Inc.)
Grasselli Chemicals Dept., Rm. N-2543PT
Wilmington 98, Delaware

Please send me a copy of "Chemicals for the Pulp and Paper Industry" and more information about: ☐ Anti-slip coatings of "Ludox"; ☐ Tailor-made Weatherproof Adhesives.

Name _____ *Title* _____

Firm _____

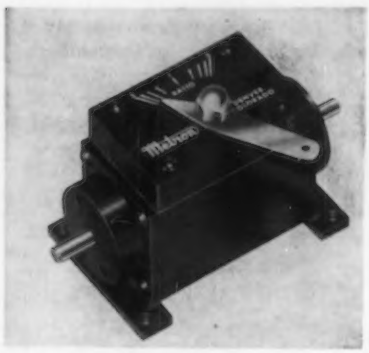
Address _____

City _____ *State* _____

NEW EQUIPMENT & SUPPLIES

Miniature Speed Changer Adjusts Over 25:1 Range

Metron's miniature adjustable ratio speed changer—Series 2—provides increased accuracy, better repeatability and longer life than the Series 3 model now widely used in military, laboratory and OEM applications (it may be integrally combined with the miniature fixed ratio



speed reducers or the angle drives to form versatile combination units).

This model has a 2⅝ inch long aluminum black anodized housing with a longer easy-to-read scale. It is supplied with either servo or foot mounts. Foot mounts may be rotated 90° in either direction. Stainless steel input and output shafts (3/16" diameter) run in double heavy-duty shielded ball bearings. The toroidal disk drive is manufactured from 52100 ball bearing steel. Moving parts are lubricated with MIL-G-3278 grease.

Ratings are: maximum horsepower output — 0.025; maximum speed — 10,000 RPM; speed adjustability—ratio continuously variable from 1:5 up to 5:1 down (25:1 overall range); torque output—5 to 40 oz. per in. depending on the ratio setting. Metron Instrument Co., 432 Lincoln Street, Denver 3, Colo. will furnish additional information upon request.

Heavy-Duty Flooring Introduced

A heavy-duty flooring, tradenamed Duratrem, has exceptional resistance to solvents and chemicals—withstands heavy trucking, has an attractive non-slip finish and is light gray in color. Duratrem is designed to meet the challenge of tough flooring problems. Wherever manufacturing conditions present difficult flooring such as: spillage of mild organic acids, alkalis, hot water, grease and oils. A number of factors that account for an important savings in time, labor and tie-up time, make Duratrem applicable for general purpose floors. It's easy to apply, can be feather edged, requires no compacting and normally no primers are needed. Light traffic is permitted after only twelve hours or heavy traffic after 24 hours. For additional information write The Tremco Mfg. Co., 8701 Kinsman Road, Cleveland 4, Ohio.

Constant Height Design of Air Line Regulator

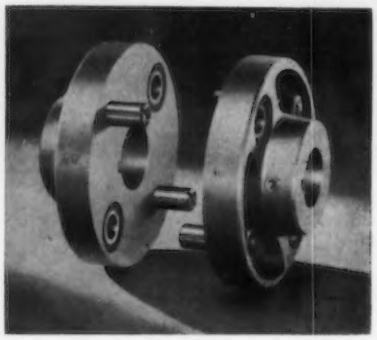
Regulators featuring a built-in pressure relief valve that "bleeds" excessive downstream air pressure harmlessly into the atmosphere have been added to the "controlled-air-power" devices marketed by the Bellows Co., Akron 9, Ohio.

The regulator knob adjusts pressure by turning on one plane of rotation; thus there is no thread action to extend the height of the unit. Freedom from obstructing handles and conical bonnets permit installation in many cramped locations. Should maintenance be required, it is not necessary to remove the unit from the air line. The replaceable chrome-plated poppet valve stem may be quickly detached and a new assembly inserted without disturbing the air line.

Bellows regulators will reduce primary line operating pressures of up to 250 p.s.i. and will maintain desired downstream pressures of 0 to 50 p.s.i., 0 to 125 p.s.i., and 0 to 250 p.s.i., obtainable from separate units. Both wall or through-panel type mounting brackets are available; gauges are optional accessories.

Sleeve Couplings Are Rubber Cushioned

The Ajax series 400 flexible couplings for use on direct-driven machinery where torque is not excessive in relation to shaft diameter, utilize steel studs and rubber cush-



ioned sleeve bearings. The four studs and sleeve bearings provide positive, resilient drive. No lubrication is required. Cast semi-steel flanges are accurately machined on periphery and face to simplify checking alignment with feeler gauge or straightedge.

Series 400 couplings are made in four sizes with 1¼", 1¾", 2¼", and 2¾" maximum bore respectively with standard square keys. They have many applications where motors are connected directly to pumps, fans, ventilators, mixers, speed reducers, light duty hoists, compressors, and other machinery where shafts are oversize in relation to torque in order to secure sufficient bearing size. Complete specifications are available in new Catalog 67 by writing Ajax Flexible Coupling Co., Inc., Westfield, New York.

Thermostat is Explosion Proof

An explosion proof thermostat, UL approved for Class 1, Group D hazardous areas, has been announced by Fenwal Inc., Ashland, Mass.

Designed for convenient immersion in tanks, wall installation, and for exposure to contaminated environments, the unit is made up of three

sub-assemblies: a series 47000 thermoswitch unit, stainless steel well, and an explosion proof junction box that completely protects the lead wire outlets. The unit is completely adjustable over a 32° to 500°F. range, and can be exposed indefinitely to —100°F., or, for short periods, to 100°F. above its set point. Current rating is 10 amps 115 VAC, or 5 amps 230 VAC. Full details are given in catalog No. 80016-4, available from the manufacturer.

Leakers Eliminated in Threaded Pipe Fittings

"Dryseal" threaded NPTF pipe fittings are made of a malleable ductile normalized air-furnace iron which is said to increase impact resistance from 33 per cent to 40 per cent.

This line of fittings are stocked in pipe sizes from ⅛ in.-27 through 2 in.-11½ in the hot dip galvanized finish plated with brass dichromate or in a special-process dull zinc rustproof finish. This includes tees, 45 and 90 degree elbows, reducing couplings and tees, pipe caps, hex bushings, unions and nipples. They are completely inter-changeable and will give complete freedom from "leakers" when assembled with any standard NPT thread.

"Dryseal" threaded NPTF standards made possible for the first time plug applications with undoped threads capable of holding, "without leakers", pressures up to 10,000 p.s.i. in pressure vessels and surge pressures in excess of 5,000 p.s.i. in hydraulic system applications. Manufacturers' Tests have shown that "Dryseal" threaded fittings are highly efficient in giving the same performance in applications under similar pressure conditions.

Samples are available upon written request to Frank Davenport, Chief Engineer, Pipe Fittings, Inc., Wellington, Ohio.

Transmitter Senses Changes in Pressure

The success of the remote liquid level indicator has led to the development by the Yarnall-Waring Co., Philadelphia 18, Pa., of a similar instrument, termed the differential pressure transmitter, which operates without visual indication, and controls a distant indicator, controller, or other electrically-operated receiving instruments.

The instrument consists of a diaphragm mechanism in a pressure housing with pressure connections at the bottom, and a sensing coil which operates the remote receiver. The sensing coil is protected by a weatherproof cover. Cable connection to receiver is located at the right end of this cover.

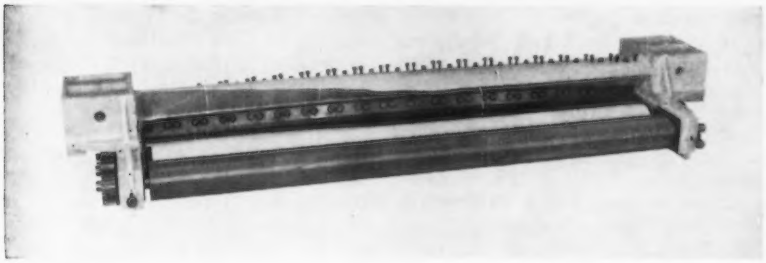
Mounted at any convenient location, it is connected to the liquid vessel, fluid line, or other container by two tubes. At the transmitter, the tube connections lead to opposite sides of the diaphragm. Variation in differential pressure on the diaphragm causes change in output of the sensing coil. This is transmitted to the remote receiver. For full details and operating specifications, write for bulletin WG-1824, Supplement A.

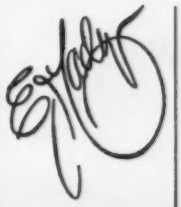
Shear-Cut Perforator Permits High Speeds

The Paper Converting Machine Co., Green Bay, Wis., announces the issuance of U.S. Patent on their shear-cut perforating unit.

The unit is said to include an important new principle in the web perforating field and one which will be increasingly popular in the years to come. Nine claims are directed to the use of resilient blades carried by the roll and engaging angularly positioned stationary blades on a frame in a progressive perforating action. The flexing blades permit high speed operation in the perforating of toilet tissue, towels and other paper products.

The unit was designed in such a way that it not only fits new machines built by PCM Co., but also existing Paper Converting rewinders already in the field.





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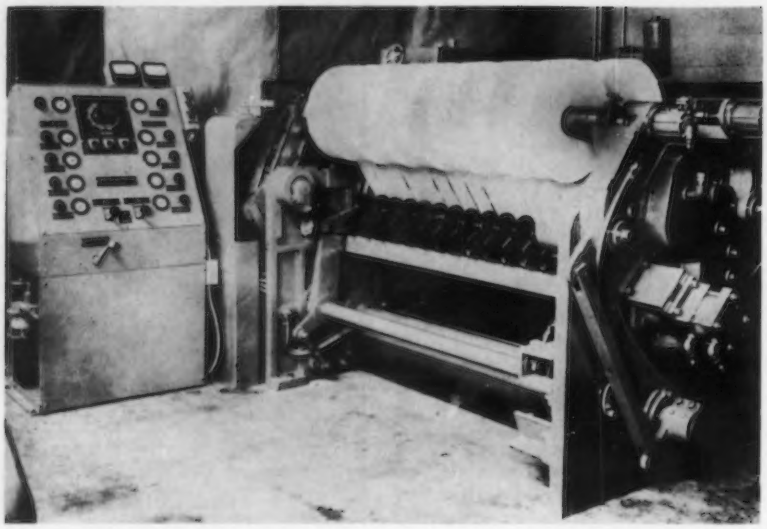
NEWS OF SUPPLIERS



Cameron Machine Co., Dover, N. J., has announced the opening of a new testing and development department. This new department has complete facilities for experimental and demonstrating slitting, rewinding and unwinding of all types of flexible webs. Cameron's unique department was initiated to fill a need in the industries they serve. It provides the only complete facilities available in this country for the purpose of establishing, improving and demonstrating techniques and basic methods of slitting, roll production and web control.

Included in the machinery in this new department are duplex combination winders; center wind duplex machines and two drum winders. All the machines are equipped with the recognized slitting elements such as score-cut, pioneered by Cameron; "Tru-Shear;" razor-cut, both fixed and oscillating types; and Sealcut for hot knife slitting and sealing. New experimental slitting methods are also designed and applied where required.

The winders are equipped with a variety of web control devices. Among these devices are pneumatic tensions; oscillating unwind stands; the new Cameron Web-Trol; photoelectronic line and edge guiding devices; hydraulic-pneumatic edge guide apparatus; and a control system to provide a fixed minimum draw from the rewind drum to the rewinding rolls when center winding on duplex combination machines.

Since the completion of the new department many leading companies have employed the facilities to advantage in learning how to run new materials and how to improve methods of handling older materials.

The following materials, which have been run successfully, illustrates the flexibility of the equipment now in use in Cameron's new testing and development department. Included in the various types of papers which have been run are: painted glazed paper, "Diazo" paper, silicone parchment, kraft, gummed kraft, toweling, "no carbon required" paper, condenser tissue, coated magazine paper, carbon tissue, tea bag paper, release paper, newsprint, photographic paper, waxed paper, glassine, dried ground wood paper, card stock paper, "carbonless carbon" paper, mail tape, glass fibre reinforced paper, lacquered paper, chrome coated paper and envelope paper.

In plastics, tests and demonstration runs have been made on polyethylene, acetate, saran, polystyrene, cellophane, recording tape, Teflon, Nylon, vinyl, Mylar, Orlon. The plastic films have been both printed and plain.

Other materials run successfully have been homogenized tobacco sheet, foil laminates, paper-plastic laminates; aluminized mylar; unoriented polyester film, uncured rubber, foam rubber and light metals.

Cameron has opened the facilities of the new testing and development department to all companies with slitting and roll winding problems. Arrangements to have test runs and demonstrations can be made by contacting either the sales or engineering departments at the Dover, N. J. plant.

Monsanto Chemical Co., has announced the start-up at Nitro, W. Va., of a new plant for the manufacture of Mersize. The new unit is integrated to its rosin raw material supply from a fractionating plant for crude tall oil, jointly owned by Monsanto and Emery Industries, Inc., which began operations here last summer. The latter plant is capable of processing 36,000 tons of crude tall oil per year.

Joseph T. Ryerson & Son, Inc., Wallingford, Conn. steel and aluminum distributor, announced the appointment of Theodore L. Kishbaugh as general manager. The appointment is effective March 1, 1959. He succeeds Charles H. Hallett who has resigned to establish his own business in California.

A. O. Dyson

Krofta Engineering Corp., Lenox, Mass., is pleased to announce the appointment of Albert O. Dyson as sales manager.

Mr. Dyson joins Krofta with wide experience representing years of sales engineering and service to the paper industry. He is a graduate of the University of Maine, Pulp and Paper Department, with a B.S. degree in mechanical engineering. After college at the American Writing Paper Corp., in Holyoke, Mass., he worked in the laboratory and in the mills on technical control. For the past ten years, Mr. Dyson has been manager of the pulp and paper division of Nichols Engineering & Research Corp., New York, N. Y., having full responsibility for their stock cleaning and deaerating equipment.

Figures of the Week

Prices of Fibers

MARKET WOOD PULP

FIRST QUARTER CONTRACT PRICES PER SHORT AIR-DRY TON

Delivered Basis

	U.S.	Canadian	Swedish	Finnish	Norwegian
Groundwood	$ 82.50/ 90.00	$ 82.50/ 90.00	§§90.00/ —	§§80.00/ —	§§90.00/ —
Bleached Gw'd	$ 97.50/100.00	$ 97.50/100.00			
Kraft, Blchd.	157.00/ —	160.00/162.50	§157.00/162.50*		§157.50/ —
Kraft, Blchd. Hdwd.	152.00/ —		§137.00/ —		
Kraft, Semi-bleached.	140.00/ —	140.00/ —			
Kraft, Unbl.	117.50/125.00	125.00/130.00	†125.00/130.00	125.00/ —	
Sulphite, Blchd.	155.00/ —	155.00/ —	*155.00/ —	*155.00/ —	155.00/ —
Sulphite, Bl. Hdwd.	150.00/ —				
Sulphite, Unblchd	135.00/ —	135.00/ —	†135.00/ —	*135.00/ —	
Sulphite, Unb'l. Gl'sn		140.00/ —	†134.00/ —		
Soda, Blchd.	147.00/150.00	150.00/ —			

§ On Dock Atlantic Ports. * Freight allowed. † Varying Freight Allowances

COTTON LINTERS

F.O.B. OIL MILLS
WEEK ENDED FEB. 17

	Atlanta	Memphis	Dallas	Los Angeles
Grade	n.a.	n.a.	n.a.	n.a.
2	n.a.	n.a.	$ — /7.25	$7.75/7.50
3	$8.00/7.00	$7.50/7.00	7.00/6.50	7.25/7.00
4	7.00/5.75	6.50/6.00	6.25/5.75	6.75/6.25
5	5.75/5.00	5.25/5.00	5.50/5.00	6.00/5.50
6	5.00/4.00	4.75/4.50	4.50/4.25	4.75/4.25
7	4.00/3.00	4.00/3.50	4.00/3.00	3.00/2.75

WASTE PAPER MARKET

Mill Prices, f.o.b. Trucks Shipping Point — Includes Brokerage

These quotations are a partial indication of the price range on volume tonnage in each market on the date specified, as gathered from major dealers and brokers. SPECIAL PACKINGS AND SPOT TONNAGE NOT INCLUDED. Prices nominal.

	New York	Boston	Chicago	Los Angeles
	Feb. 16	Feb. 16	Feb.	Feb.
No. 1 Mixed Paper	$ 10.00/ 11.00	10.00/ 12.00	9.00/ —	13.00/ 14.00
No. 1 News	17.00/ 18.00	18.00/ —	25.00/ —	17.00/ 18.00
Overissue News (Lg. size)	16.00/ 18.00	15.00/ 17.00	30.00/ —	20.00/ 22.00
Mill Wrappers	19.00/ 22.00	16.00/ 18.00	12.00/ —	15.00/ —
Old Corrugated Containers	24.00/ 25.00	23.50/ 24.00	25.00/ —	24.00/ —
Super Resorted Kraft Paper	35.00/ 40.00	35.00/ 40.00	35.00/ —	55.00/ 57.50
New Double Kr. Ld. Corr. Cuts	35.00/ 37.50	37.50/ —	37.50/ —	35.00/ 37.00
(Semi-chem. medium)	47.50/ 50.00	45.00/ 50.00	45.00/ 50.00	35.00/ 36.00
New 100% Kraft Corr. Cuts	40.00/ 42.50	50.00/ 55.00	57.50/ —	— / —
New Br. Kraft, Env. Cuts	70.00/ 75.00	70.00/ 75.00	52.50/ —	55.00/ 57.00
New Br. Kr. Bag Waste Prntd.	55.00/ 60.00	55.00/ 60.00	52.50/ —	55.00/ 58.00
New Br. Kr. Bag Waste Unprintd	60.00/ 65.00	65.00/ 75.00	62.50/ —	58.00/ 60.00
No. 1 Groundwood Shvs.	25.00/ 30.00	22.50/ 27.50	27.00/ —	35.00/ 37.50
White Newsblanks	60.00/ 65.00	50.00/ 57.50	45.00/ —	55.00/ —
No. 1 Soft White Shvs.	60.00/ 65.00	60.00/ 65.00	55.00/ —	67.00/ 70.00
Super Soft White Shvs.	65.00/ 75.00	75.00/ 85.00	65.00/ —	— / —
Hd. White Shvs.	90.00/ 95.00	95.00/105.00	85.00/ —	95.00/ 97.00
Hd. White Env. Cuts	105.00/110.00	110.00/115.00	90.00/ —	113.00/115.00
Col. Tab. Cards	55.00/ 62.50	60.00/ 67.00	52.50/ —	38.00/ 40.00
Manila Tab. Cards	77.50/ 82.50	85.00/ 90.00	75.00/ —	65.00/ —
No. 1 Col. Ledger	35.50/ 40.00	37.50/ 42.50	47.50/ —	32.00/ 35.00
White Ledger	60.00/ 62.50	60.00/ 65.00	57.50/ —	50.00/ 55.00
Mixed Book & Mag.†	20.00/ 23.00	18.00/ 20.00	17.00/ —	— / —
No. 1 Books‡	25.00/ 30.00	20.00/ 22.00	35.00/ —	17.00/ —

† Includes Time & Life; no coarse groundwood. ‡ Not to exceed 10% of groundwood.

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Figures of the Week

PAPER PRODUCTION RATIO REPORT—American Paper & Pulp Assn. Figures

(Production as per cent of normal capacity)

COMPARATIVE WEEKLY SUMMARIES

	Jan. 17	Jan. 24	Jan. 31	Feb. 7	Feb. 14
1959	90.3	90.0	88.8	89.8r	87.4
	Jan. 18	Jan. 25	Feb. 1	Feb. 8	Feb. 15
1958	90.6	91.4	86.5	87.9	89.1

r Revised.

COMPARATIVE MONTHLY SUMMARIES

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1959	87.6‡	—	—	—	—	—	—	—	—	—	—	—	—
1958	86.9	89.5	89.5	88.4	87.2	87.2	75.3	89.6	86.5	91.6	90.4	83.1	87.1

‡ Preliminary.

COMPARATIVE YEARLY SUMMARIES

	1952	1953	1954	1955	1956	1957	1958	1959
Year to Date	97.8	95.2	94.3	93.9	101.7	95.2	85.5	87.6
Year Average	88.6	92.3	91.6	94.0	97.9	90.9	87.1	—

All of the above data is based on tonnage reported to American Paper and Pulp Association. Does not include mills reporting to National Paperboard Association, except in isolated cases where both paper and paperboard are produced and separate tonnage figures are not readily available.

PAPERBOARD OPERATING RATIOS†—National Paperboard Assn. Figures

COMPARATIVE WEEKLY SUMMARIES

	Jan. 17	Jan. 24	Jan. 31	Feb. 7	Feb. 14
1959	93	91	92	93	94
	Jan. 18	Jan. 25	Feb. 1	Feb. 8	Feb. 15
1958	90	87	82	83	86

COMPARATIVE MONTHLY SUMMARIES

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1959	86	—	—	—	—	—	—	—	—	—	—	—	—
1958	80	86	88	84	84	86	76	93	90	95	92	81	86

† *Percents of operation based on "inch-hours" reported on a 6-day basis.*

SUMMARY OF PAPERBOARD STATISTICS—National Paperboard Assn. Figures

ITEM	THIS WEEK ENDING Feb. 14, 1959	LAST WEEK ENDING Feb. 7, 1959	CUMULATIVE TO DATE Jan. 1 to Feb. 14 inc., 1959
% Activity	94%	93%	90%
TOTAL	310,348	298,371	1,810,797
Liner	105,263	100,422	616,992
Corrugating Material	46,626	46,318	268,314
Chip & Filler Board	4,338	5,209	30,555
Total Containerboard	156,227	151,949	915,861
Folding	60,087	57,576	340,760
Set-Up	11,107	13,054	70,566
Special Food Board	31,300	26,074	165,149
Other	51,627	49,718	318,461
Total Boxboard	154,121	146,422	894,936
TOTAL ORDERS			
Received	289,084	345,179	
Unfilled End of Week	409,012	431,708	

Alvin H. Johnson & Co.

INCORPORATED

Consulting and Designing Paper Mill Engineers

415 LEXINGTON AVENUE NEW YORK 17, N. Y.

PAPER MILL DESIGN PROCESS ENGINEERING POWER PLANTS

STRUCTURAL AND ARCHITECTURAL DESIGN

REPORTS APPRAISALS ESTIMATES AND SURVEYS

K. E. Youngchild

G. E. Fromm

W. E. Reinschmidt

American Cyanamid Co.'s paper chemicals department. K. E. Youngchild has been appointed sales manager. Mr. Youngchild will report to J. M. Walsh, manager of the paper chemicals department.

G. E. Fromm has been named as southern regional manager and W. E. Reinschmidt as midwestern regional manager.

Mr. Youngchild has been with Cyanamid since 1937 and has served in technical service and sales posts with the paper chemicals department.

Mr. Fromm joined Cyanamid in 1939 at the company's Stamford Laboratories as a development chemist. He has served in sales and technical service posts with the paper chemicals department. Until his recent appointment he had been serving as manager of the midwestern region.

Mr. Reinschmidt, who has been with Cyanamid since 1955, has served as sales and service representative in the department's southern region.

Cellulose Sales Co. announces the appointment of Erik Goranson as vice president and also that L. Walter Lawrence has been engaged to represent the company primarily in the Midwest territory.

Mr. Goranson has been connected with Cellulose Sales Co. since 1952 and prior to coming to New York he spent several years with the parent company in various positions in the head office in Sundsvall, Sweden, and the several pulp mills belonging to the company.

Mr. Lawrence has been identified with the pulp and paper industry for many years, dating back to 1943, when he became associated with the Soundview Pulp Co.

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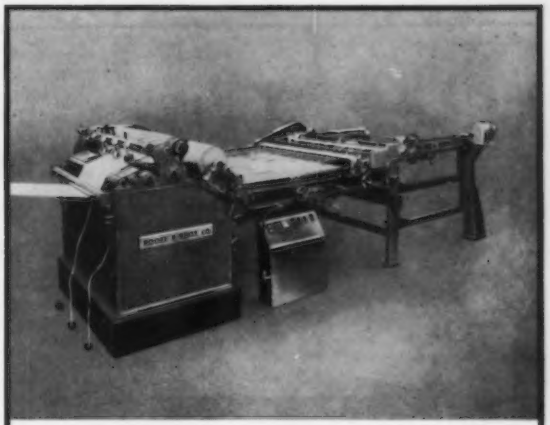
High Speed Disc Refiner

THE BAHR BROTHERS MFG. CO.

MARION, INDIANA, U. S. A.



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A completely integrated cutter layboy unit designed for high speed sheeting in finishing room and converting applications.

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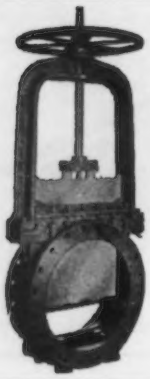

RECORD PAPER & PULP STOCK VALVES "BONNETLESS" SELF CLEARING---"RESIDUE POCKETLESS TYPE"

METALS — I.B.B.M. all iron, bronze or stainless steels, body parts plain or rubber lined.

The photo of 24" Fig. 241 I. B. B. M. valve while illustrating the gate bottom wedge system for forced gate seating and "GUILLOTINE" edge for shearing fibre at seat also shows the packing box and yoke as separate units. Both adjustable.

- The "FAST THREADED" screw stem and ball bearing speeds valve operation.
- The packing box is extra deep, is adjustable and provided with specialized lubricated packings and special type gland and compression bolts.
- The yoke mountings are such that yokes for various methods of gate operation are interchangeable.
- Replaceable gate edge shoes are used in valves 10" and larger. These shoes are of special value when valves are installed stem and pipe horizontal.

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Chemical Engineer of Chemist with paper experience for applications and technical sales work with company selling adhesives to the coated paper trade. Excellent position with well-established company; located Middle West. Please send full resume to Box 59-58 care Paper Trade Journal.
M-16

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Offering a Comprehensive and Confidential Placement Service to Employers and Employees in the Pulp, Paper, Converting and related Industries
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New England concern desires manufacturer's representatives or agents with good paper mill contacts on all types of rolls in PenJerDel area and southeast.

Rodney Hunt Machine Co.
Industrial Roll Division
Orange, Mass. M-9

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M-9

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Machine Tenders and Back Tenders

for combined Fourdrinier Pick Up Machine with Pre-Driers and Yankee Attachment.

Machine is a Beloit Unit producing light weight paper at high speeds

Experience at operating such machine with Pick Up or Straight essential

Excellent salary and living conditions on contract basis for qualified personnel

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PRINTING PRESSES

1—65" 6-color Kidder Master Anilinor
1—54" 1-color Rotogravure Press
1—49" 1-color Rotogravure Press
1—48" 4-color Cottrell Heinrich; 3 Flexo; 1 Gravure
1—42" 4-color Kidder Std. Anilinor
1—36" 5-color Wolverine Hydro Press
1—36" 2-color Champlain Gravure Press
1—36" 5-color Koenig & Bauer Rotogravure
2—33" 6-color Cottrell-Heinrich Flexo Presses
1—30" 4-color H-S Flexo Press
1—24" 5-color Kidder Celloprinter
1—18" 2-color Potdevin (Model-217) Roll to Roll Press
1—17" 3 color Heinrich "Lilliput" Flexo Press
1—10" 4 color Roto Press
3—New Era Presses;—9" x 12" and 12" x 12"

POWER PAPER CUTTERS

Seybolds: 1—44" late model Seybold Model P4460 New 1952
Precision: 40", 50", 57" & 64"; 10Z: 40", 57" & 65"; 20th Century: 45", 54" & 60"; Dayton (6Z): 35", 40" & 84"; Holyoke: 65"; Sheridan: 36" new model, 55"; Oswegos: 38" & 44" & 34", 54" Heavy Duty; Lawson: 52" Auto Space & 52" Standard

CAMACHINES

1—75" 10-11
1—72" 26-3A Cameron
1—72" 10-04 Shear Cut
1—72" 10-10A
1—62" & 2—52" 9-5
1—62" 10-5
1—62" 26-2A with 100 score cutting units
1—62" 40-1-AF
1—52", & 1—42" Model 24-7
1—42" Type 9-5-A Roller Bearing 1500 fpm
1—42", 50" & 62" Type 6

OTHER SLITTERS

1—82" Langston Type B
1—60" Langston Type A
1—42" Kidder Merchant Model
1—36" Kidder SLN (Shear Cut) Fully Equipped for converting adding machine & teletype rolls.
30" Fales Model B Slitter and Rewinder
2—24", 1—30", 1—36" & 1—40" Kidder S.L. Shear cut

MISCELLANEOUS MACHINES

1—81" Dietz "Facial Roll" Toilet Converter (1954)
1—Lawton Mod. "A" Jr. Toilet Roll Wrapper
4—62" 25W H-S Roll Winders
2—60" Potdevin Squeeze Roll Waxers
1—60" Hot Melt Coaters & Laminators
1—48" Hot Melt Coater and Laminator
1—46" Reverse Roll Coater
1—40" and 1—48" Asphalt Laminators
1—30" Double Reverse Roll Coater
1—90" Duplex Hamblet, Layboy and Back Stands
10—Hamblet Sheeters 32", 42", 45", 50", 62", 68", 72", 84", 90" and 104"
1—30" Peters Sheeter, Model UD
1—45" Beck Auto-Piler
4—Schultz continuous roll winders. Two—12", One 18" and 1—24"
1—24" Shultz Rewinder with wrapping attachment
1—Goins Garment Bag Machine
1—Potdevin (Model 111-S) F & S Cello Bag Machine, Electric Eye
1—Potdevin Model 224 Garment Bag Machine, 2 color printing, large range
1—Potdevin Model 72-C Cellophane satchel bottom bag machine
1—Potdevin Model 295 Duplex Coffee Bag Machine
1—Weber Model "CN" Cellophane Satchel Bottom Bag Machine
1—Simplex Model 4-7 Cellophane Bag Machine
1—Roto Bag Machine Po-5
1—Roto Bag Machine Model PO-2R
DIE PRESSES: 1—Seeley 60" x 14"; 4—Sheridans, 2—37" x 19", one 48" x 31", one 59" x 36", 1—Kidder 38" x 24"
3—Waldron Gummed Paper Breakers 50", 56" & 66"
1—Hayssen Model 5-9 Cellophane Wrapper
1—50" Hudson Sharp Embosser-tinter
1—48" Unicraft Embosser

M-16

Help Wanted

SOUTHWEST UNBLEACHED KRAFT PAPER AND BOARD MILL PLANNING EXPANSION NEEDS:

PLANT ENGINEER — Graduate engineer up to age 40 with paper mill experience as Plant Engineer, Assistant Plant Engineer, Power Superintendent, or related positions. Should be familiar with paper mill planning, operations, and maintenance. Expanding opportunities. Salary open.

Also young graduate engineers with some experience in paper mill engineering are needed.

Applicants for above should submit data sheets covering personal history, educational background, and specific job experience to Box 59-67 care Paper Trade Journal.

M-9

PAPER CONVERTING MACHINERY DESIGNER

Wanted by manufacturer of paper and film bag machinery and printing presses.

Located in pleasant New Jersey community.

Degree not necessary—only the ability and practical background for independent design of converting machinery.

Excellent opportunity for capable man. Salary open.

Please send resume of experience. Box 58-13 care Paper Trade Journal.

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PAPER SALESMEN

EAST COAST JOB LOT CONVERTER NEEDS EXEC. TYPE SALESMEN WITH COARSE AND FINE PAPER EXPERIENCE.

SALARY—SEND RESUME. ADDRESS BOX 59-41 CARE PAPER TRADE JOURNAL.

M-2

LAMINATING MANAGER

One experienced in board to board, paper to board, grease proof to board, wax and adhesive laminants. Modern plant. Excellent working conditions. Excellent salary and benefits. Write complete resume of education and experience. P. O. Box 59-80, care Paper Trade Journal.

M-16

Wanted ENGINEER—graduate with 2 or 3 years or more experience in piping design for steam plants, paper mills, etc. Location Minneapolis, Minnesota. Steady fulltime only. Address Box 59-54 care Paper Trade Journal. A-13

Help Wanted

CONTROL SUPERINTENDENT

Ontario Kraft Mill requires a Control Superintendent. Applicant should be a graduate engineer with at least five years' experience in the Control Department of a kraft pulp and paper mill. Please send resume of experience to **Box 59-77 c/o Paper Trade Journal.**

M-2

MACHINE TENDER

For small Fourdrinier machine running Towel and Napkin grade, located Bloomfield, N. J. Steady work—Liberal Co. Paid Benefits. Reply promptly stating experience, age and salary expected to Box 59-83, care Paper Trade Journal.

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Situations Wanted

PAPER MILL
Finishing and Shipping Consultant

If you have a Sheeting, Rewinding, packing, car loading or related problem in your finishing and shipping dept. let me visit your mill and see if I can help solve the problem.

If you are building a new mill let me help you plan your Fin. & Shipping Dept.

I have had 25 years experience in F & S in 7 different paper mills. The last eight years in the capacity of F & S supt. in 3 modern mills.

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Diversified experience planning, construction, operation both large and small paper mills; integrated and non-integrated in tissue, glassine, fine grade, and kraft. Many years experience as Plant Engineer supervising construction, maintenance, steam, and power distribution. Good labor relations maintained. B.S.M.E. degree and graduate work. Desire connection West Coast, Farwest, Southwest, or South.
Address Box 59-55 care Paper Trade Journal.

M-2

BARGAINS

IMMEDIATE DELIVERY

1—128" B & S 10-Roll Calender Stack. King Roll 24" Dia. Heavy box frames, full set of doctors. Excellent Condition.
1—86" Farrel 8-Roll Calender Stack. Anti-friction Bearings. Excellent Condition.
26—36" x 72" Complete Dryer Section, Stack, Drives, Etc.
10—48" x 150" Pusey & Jones Dryers.
1—84" Kamyr Machine, Complete. 75 ton per day output.
1—E. D. Jones Majestic Jordon No. A-482. New S.S. Fillings. Like New.
1—E. D. Jones Imperial Jordon, S.S. Fillings
1—Noble & Wood Mammoth Jr. Jordon, S.S. Fillings
1—Monarch Jordon, Model SP, Serial #21095, no fillings. Direct connected to a 75 H.P. G.E. 400 RPM Motor.
1—No. 3 Jones Pulpmaster, Late Type. Complete Drive.
1—Dilts #1 Hydrafiner, Anti-friction Bearings.
1—45" Seybold-Dayton Trimmer and Cutter with 5 H.P. 220/440 Volt Motor.
1—A.P.P. Rotary Centrifugal Pulp Screen. 40" Dia. x 42" Face. Serial #1274227. Like new. Capable of 40 ton groundwood pulp per day.
1—Trimbey Senior Rotary Screen.
2—Impco Rotary Pulp Screens.
3—No. 3 Impco Rotary Knotter Screens. S.S. Plates.
1—110" Pusey & Jones 2-Drum Winder. A.F. Bearings.
1—Hudson Sharpe Toilet Tissue Converting Machine. Ser. #2123. 8 Spare Mandrel Bars.
1—42" Dia. x 110" Face Pope Type Reel. Excellent Condition.
1—25" Dia. x 156" Face Sandusky Suction Couch, Bearings & Stands.
1—22" Dia. x 138" Perforated Face Sandusky Suction Couch, Bearings & Stands.
1—10-Knife Carthage Chipper with Anti-friction Bearings.
1—54" Dia. x 48" Face Valley Iron Tub Beater.
1—Dilts 53" Dia. x 60" Face—2000 lb. Iron Tub Beater. S.S. Extractor Type Hood.
1—Seybold Knife Grinder. Size G, 84" Table. Serial #4X802.
1—Sandy Hill Sulphur Burner. Complete.
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1—Tugboat Annie Pulper.
1—Worthington Air Compressor, Model 5TR2. 2-Stage, Air Cooled. 5 H.P.
1—C.P. 12 x 10 Air Compressor, 100# Pressure.
1—I.R. 7 x 7 Air Compressor, 100# Pressure
1—No. 244 Mattison 18" Core Cutting Saw —5 H.P. 3450 RPM, 3/60/220-440 volt.
1—90 H.P. Terry Turbine. Type G-4000/1000 RPM. For Paper Machine Drive. Complete.
1—No. 2 Jones Pulper. A.F. Bearings. Spare Worm.
1—36" Putman H.D. Lathe—15' Centers.
1—24" x 6' L & S Geared Head, H.D. Machine Lathe. Taper Attachment, Hollow Spindle, Motorized.
1—A.C. 75 H.P. 3/60/220-440 Volt, 720 RPM. T.E.F.C. Type ARZX Motor.
1—A.C. 60 H.P. 3/60/220-440 Volt, 720 RPM. T.E.F.C. Type ARZX Motor.
1—G.E. 100 H.P. MG Set, 250 Volt D.C.
1—250 H.P. Ingersoll Rand Diesel Engine Generator Set—G.E. Generator, 150 KW, 480 Volts, 720 RPM.

Save over 50% on your requirements for New Jordon Fillings. S.S., Bronze & Carbon Steel.

Gear Reducers, P.I.V. Drives, Generators, B.B. Pumps, Stock Pumps, Plunger Pumps, Etc.

1000 Electric Motors from ¼ H.P. to 600 H.P. In Stock.

The above is but a small part of the inventory we carry. We can furnish you with almost anything in the line of paper mill, electrical and machine shop equipment.

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BEATERS
2—1500 lb. rag beaters, Valley Iron, bandless rolls, 54" x 48", cast iron tubs

CALENDER STACKS
1—3 roll 84" calender stack.
1—4 roll 72" Calender Stack. (Extra heavy duty).
1—5 roll 82" face.
1—5 roll 86".
1—7 roll, 84" face.

CHIPPERS
1—96" Murray 4 knife Chipper—anti-friction bearings.
1—84" 10 knife Carthage Chipper. Anti-friction bearings.
24—Chipper Knives 15⅞ x 8¼, 2 slot.

CRUSHER & HAMMERMILL
1—Jeffrey Shredder
1—Murray Chip Crusher.
1—Williams Hammermill

CYLINDER MOLDS
2—42" diameter x 106" face
7—36" diameter x 94" face, hollow shafts, Very good condition.
1—30" diameter x 72" face.
1—30" diameter x 92" face.
1—36" diameter x 84" face
2—36" diameter x 82" face
2—36" dia. x 54" face.
3—36" diameter x 90" face, 18" diameter couch rolls.
1—60" dia. x 170" face.

DIGESTERS
1—Biggs 12' 6". (Globe)
1—10' high x 5' dia. High pressure vertical digester.

DISINTEGRATOR
1—Shartle 8" disintegrator (new) with 125 horsepower induction motor. (totally enclosed)

DRIVES
1—Rice-Barton hypoid enclosed drive, 4 to 1 ratio.
1—#6 Reeves vertical—anti friction bearings, totally enclosed.
1—Sandy Hill right angle 50 H.P. (4.75 to 1).
1—Jones 21 H.P., ratio 10 to 1 (enclosed angle drive)
1—#4 Reeves Drive
2—Waterbury Hydraulic Variable speed line shaft drives (from 40 to 100 H.P.)
1—Beloit hypoid enclosed drive 60 h.p 5 to 1 ratio.
1—5 H.P. Reliance Drive, complete with starting equipment, like new.
1—20 H. P. U. S. Varidrive
1—Agitator drive

DRYERS
1—28" diameter x 84" face
2—30" diameter x 40" face with bearings
2—30" diameter x 48" face with bearings.
4—48" dia. x 52" face with frames, gears, bearings
1—36" diameter x 44" face
3—36" diameter x 76" face.
5—36" diameter x 84" face, anti friction bearings and gears.
1—16" diameter x 54" face (steel)
1—48" diameter x 92" face.
6—48" diameter x 130" face.
2—Cooling Drums, bronze 36" x 128", with frames, gears & necessary rolls to make up the unit. (After dryers)

EMBOSSING CALENDERS
1—43" 3-Roll Embossing Calender.
1—62" 2 roll Embosser.

EXTRACTOR ROLLS
1—Extractor roll, 26" diameter x 104" face
1—Rice Barton & Fales, Extractor Roll, 26" diameter x 104" face

FELT ROLLS
50—Brass Felt Rolls, with Brass Journals, 72" face x 5" dia.

FILTER
1—Dorr-Oliver Filter, 3 ft. dia. x 6 ft. face, stainless steel construction, with pump.

FLAT SCREENS
1—8 Plate "Packer"
1—12 Plate "Packer"

HOGS
2—Mitts Merrill Type 15 C.F.

JORDANS
1—Noble & Wood Mammoth
1—Noble & Wood Monarch, Type D.

LABORATORY EQUIPMENT
1—Bauer-McNett Fibre Classifier
1—16" diameter x 24" Face Dryer
1—Press Roll 6" diameter 24" Face, steam jacketted
1—2' Shartle Hydrapulper
2—8" x 8" Valley Sheet dryers
1—12" x 12" Valley Sheet dryer
1—6" diameter Hydraulic Press
1—Experimental Digester (High Pressure)
1—15 lb. E. D. Jones Beater
3—Jonsson Test Screens
2—8" x 8" Valley Hydraulic Presses
1—6" Mayer Coater.
1—Clark Softness & Stiffness Tester
1—20" Dilts Wet Machine
1—10" Butterworth Padder.
1—Williams Freeness tester, complete
1—Thwing Albert Tensile tester
1—Gurley Densometer Model 4110 Chain-O-Matic Balance Scale

LAMINATING MACHINES
2—84" Asphalt laminators.

MISCELLANEOUS
1—#1 Miami Selectrap

MOTORS
1—100 H.P. Westinghouse Motor, variable speed, 585 r.p.m.

PRESS ROLLS
2—Chilled iron, chrome plated 9" x 72"
1—Chilled iron, chrome plated 12" x 100"
1—Chilled iron, chrome plated 10" x 74"
8—sets (1 rubber, 1 chrome steel) 74" face x 15" dia., complete with bearings.

PRESS SECTIONS
2—Complete Press Sections with (frames, gears, bearings), 18" diameter x 90" face rolls (1 rubber, 1 bronze & 1 rubber, & 1 Stonite). Also 2 extra brand new rubber covered rolls.

PULPERS
4—Dyno-Pulpers

PUMP
1—Morris-10,000 g.p.m. 25 ft. head (all bronze)

REELS
1—86" 2 bowl reel.
1—84" 3 bowl revolving reel.
1—100" Rice Barton 2 bowl Reel, heavy duty.
1—123" 3 bowl Revolving Reel
1—134" 2 drum
1—72" Downingtown Reel, 2 bowl.

REFINERS
1—Dilts Classifiner, practically new
1—Rice Barton Dynofiner, details on request.
1—Dilts, Hydrafiner, stainless steel filling, anti-friction bearings, excellent condition, including 125 h.p. motor
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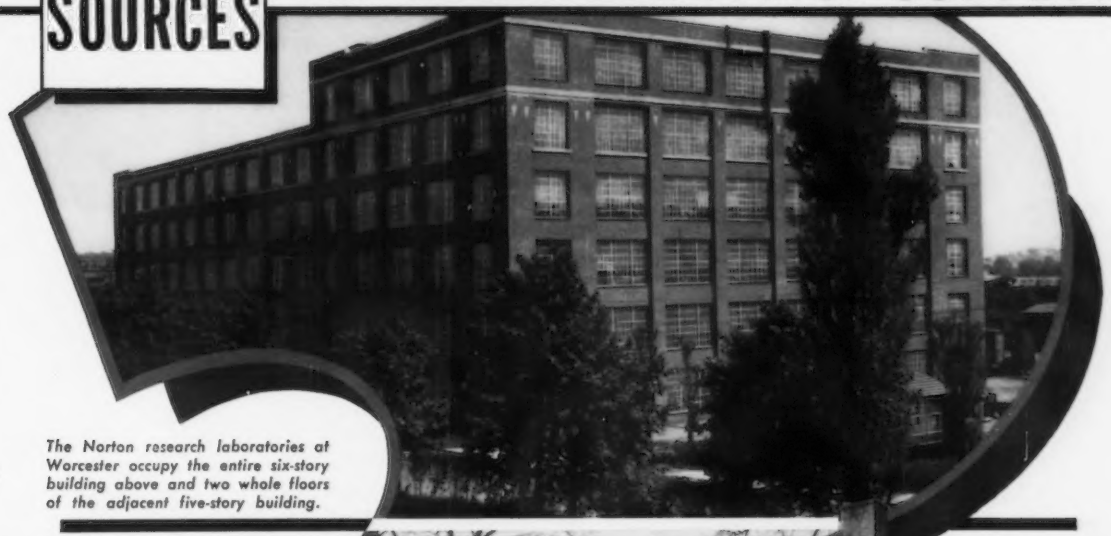

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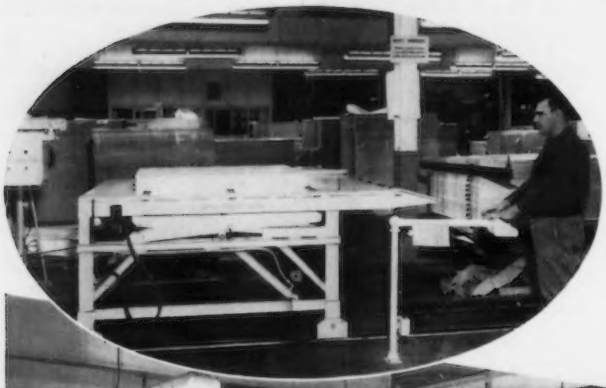

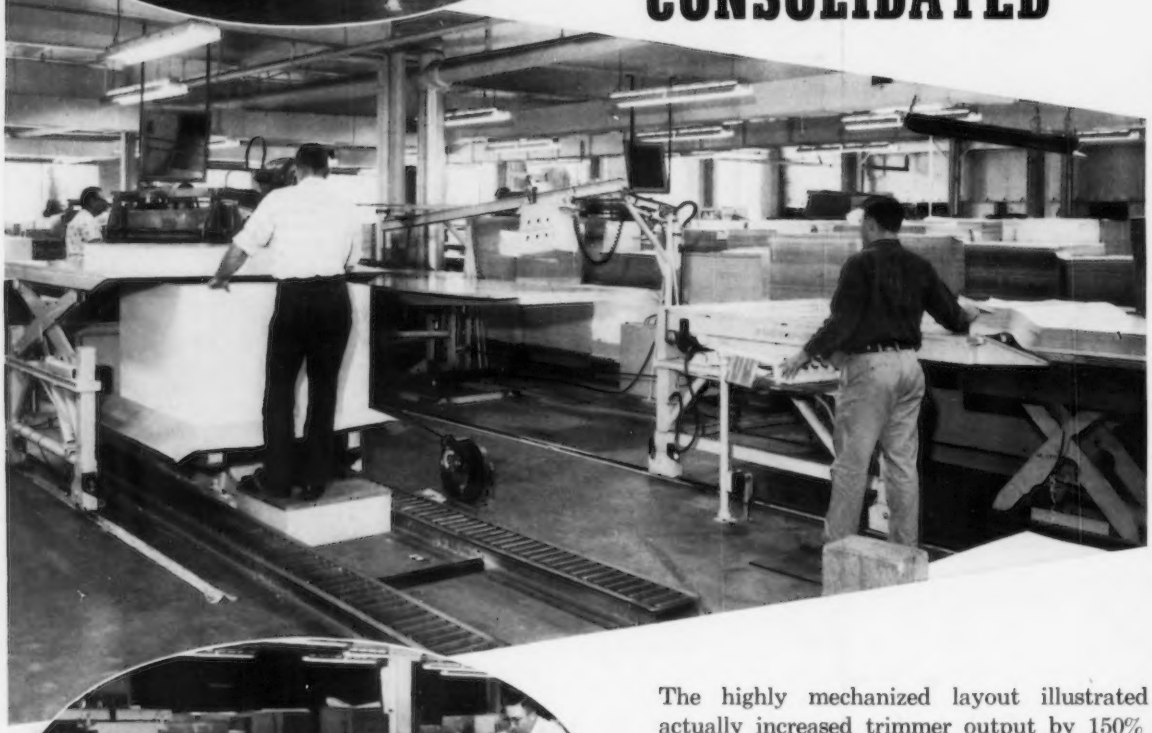

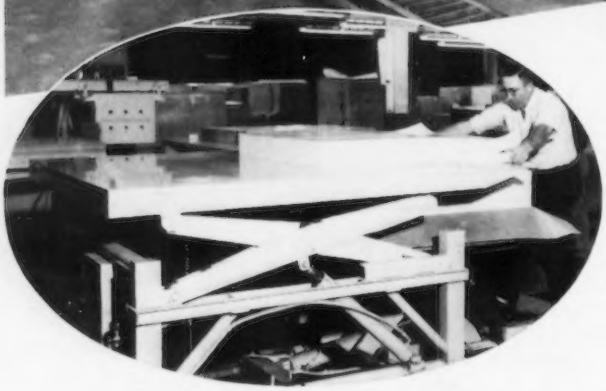

Photos Courtesy Consolidated Water Power & Paper Co

The highly mechanized layout illustrated actually increased trimmer output by 150% . . . for by its simplification the feeding of untrimmed paper and the piling of trimmed paper were expedited, enabling the trimmer to operate nearer to capacity.

This is another typical example of how a Southworth installation aids in cost reduction by a better use of existing facilities, by minimizing waste through better handling and by the improvement of safety conditions for the workers.

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